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JPRS Report

**Environmental
Issues**

Environmental Issues

JPRS-TEN-94-010

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15 April 1994

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Experts Report on Guangdong Water Resources Crisis

HK0104104494 Hong Kong ZHONGGUO TONGXUN SHE in Chinese 0618 GMT 22 Mar 94

[Text] Guangzhou, 22 Mar (ZHONGGUO TONGXUN SHE)—A number of water conservation specialists of Guangdong Province yesterday (21 March) warned against a water resources crisis in Guangdong.

The specialists gave the warning at a meeting here on the eve of the "World Water Day."

At the meeting, the specialists sounded the alarm with a series of figures. The average volume of water resources of Guangdong Province is about 186 billion cubic meters, ranking fifth in China, and the per capita volume is about 2,800 cubic meters, ranking tenth in China, 20 percent higher than the average for the whole country, but less than the world's average by one-third. The specialists pointed out that these water resources cannot be fully utilized because of extremely uneven distribution in terms of time and place. Each year, 80 percent of the water flows into the sea as floods, while the volume of water is very small in dry seasons. Zhanjiang is one of the five dry areas in China. Water pollution has intensified the contradiction between supply and demand of water resources. The water shortage will spread from coastal and economically developed areas to other areas except the "Xi Jiang corridor." At present, the economic development of coastal areas such as Shanwei, Shenzhen, Zhanjiang, Honghai Bay, Daya Bay, Shangxiachuan Island, Hailing Island, Donghai Island, and Haian, have been seriously impeded by the shortage of water resources.

In view of the increasingly serious crisis of water resources, the specialists urged the whole society to strengthen the sense of water, and to change the practice of using water at will and of using water free of charge. They called for unified planning for water resources, rational development and exploitation of water resources, saving water, and using market mechanisms to protect water resources.

China Viewed as Potential Market for Eco-Exports

94WN0210A Duesseldorf VDI NACHRICHTEN No 7, 18 Feb p 3

[Article by Hans Dieter Sauer: "Opportunities for Export of Environmental Technology to China"]

[Text] [First paragraph editor's summary] VDI-N, Dusseldorf, 18 Feb 94—In China all signs point to growth. Even now, in the early phases of the economic boom, great ecological dangers are looming on the horizon. An opportunity for the environmental technology industry: only ecologically sound businesses will save from China from an eco-disaster.

China's economy is heading for record heights: it led the world last year with a growth rate of 13 percent. But the period of frantic economic growth is coming at the expense of the environment. In the report "Environmental Strategy for Asia," the World Bank is now sounding the alarm. It

emphasizes that in China the destruction of natural resources has already reached a level which endangers further economic development. China expert Vaclav Smil of the University of Manitoba in Canada also paints a dark picture: "There is no doubt that in spite of advances in certain areas the condition of the environment in China will be more alarming in the year 2000 than it was in 1990."

Chinese scientists are also aware of how serious the situation is. In the proposal of the environmental report for 1992 the director of the Chinese environmental agency NEPA (National Environmental Protection Agency), Qu Geping, lamented. "Environmental protection in China cannot keep pace with the reshaping of our economy from a planned economy to a market economy." There it is considered a success if air and water pollution rise more slowly than economic growth. The emission of sulfur dioxide rose by "only" 3.9 percent to 16.85 million tons, dust yield rose by 7.9 percent to 14.14 million tons, and sewage increased by 9 percent to 36.65 billion cubic meters.

Four-fifths of the air pollution is to be blamed on coal as an energy source: 1.1 billion tons are burned annually, accounting for 75 percent of Chinese energy use. Two-thirds of the coal used is burned in industry or for home heating without further treatment; flue gas treatment is virtually unknown. According to official reports the permissible average value of 300 micrograms of particles per cubic meter of air is being exceeded in 50 of 55 cities investigated. By comparison, in Germany the maximum average annual value is 150 micrograms per cubic meter.

As a result of the economic boom, environmental stresses have also begun to have an effect at ground level. Since the legalization of private business thousands and thousands of small businesses have arisen in the villages, and while they work with high economic efficiency—at the moment they are producing 30 percent of the gross national product—because of their primitive technical equipment they emit waste gases and sewage unfiltered into the environment. Oskar Weggel of the Institute for Asian Studies in Hamburg gives a vivid description: "Innumerable mini-factory chimneys pour coal dust into the atmosphere, and industrial sewage flows from a labyrinth of waste pipes into the country's streams and rivers."

It is not that there are no laws in China against environmental pollution. Environmental protection is even anchored in the constitution. But officials on the provincial and district level have something else on their minds besides maintaining environmental standards. Last year the central government was forced to send teams of inspectors through the provinces to "raise consciousness about obeying the law." A summary of the results of the investigation stated: "Many local politicians are sacrificing the environment in order to make economic profits."

But the wretched state of the environment should not be blamed solely on the rampant uncontrolled growth of the private sector; the inherited burdens of a planned economy have just as harmful an effect. According to a NEPA list,

approximately 3,000 businesses, most of them still the property of the state, account for 60 percent of industrial environmental pollution. Many of these companies have been so mismanaged that there is no money available for environmental investment.

The leading environmental problem in China is water pollution. It is true that initial progress was made in the treatment of industrial wastes in 1992; for instance, arsenic and cyanide contamination dropped by about 23 percent. But the treatment of communal sewage is in a very bad state; drains exist only in the large cities. Of the 13.3 billion cubic meters of sewage gathered there annually, only 10 percent is superficially cleaned. In Shanghai, a city of 13 million inhabitants, only 4 percent of about 2 billion cubic meters of sewage is cleaned; the rest goes into the Huangpu River untreated. Since the groundwater is also frequently contaminated in many places, often 50 million people have only polluted water to drink.

"Chinese water services are vitally endangered," is the evaluation of the authors of the report "Environmental Protection in the People's Republic of China," which was recently presented at the first German-Chinese environmental symposium in Bergheim, near Cologne. For the report the Research Institutes for Water and Waste Management in Aachen and Erfstadt (FiW) and the Institute for Community Water Management of the RWTH in Aachen evaluated numerous Chinese sources.

Water pollution is even slowing down further economic development, regionally speaking. Reiner Fonteyn, chief executive of the FiW, explains this point with an example from Shanxi province. There a coal factory cannot be expanded because the cooling water from the river is already too polluted. Economic pressure has now forced the construction of a purification plant for the city of Yangquan, which lies upstream. "China has no other choice than to invest massively in environmental protection," according to Fonteyn, whose institute has now signed cooperative agreements with several Chinese research institutes about the planning of purification plants.

In theory, this opens up absolutely unlimited sales possibilities for German manufacturers of ecotechnology. But access to the Chinese market is anything but easy. In North Rhine-Westphalia, companies from the ecotechnology sector—supported by the Land government—have formed the association "Pro Asia e. V." to make entry into the market easier through exchange of information and experience.

The region around the Rhine and the Ruhr is taking on the role of an outrider in German-Chinese cooperation: it supports partnerships with three Chinese provinces. As soon as February the governor of Sichuan province will visit, accompanied by economic experts, and in March a joint delegation from the environmental and economic ministries in Duesseldorf will travel to Jiangsu.

But good relations do not necessarily turn into business deals. Financing is always a significant hurdle in project negotiations. The Japanese are emerging as powerful

rivals, facilitating the financing of investments with favorable credit rates, according to Pro Asia's chairman, Dieter Wunderlich.

Still, German industry is not pursuing a forlorn hope. According to statistics from the Federal Agency for Foreign Trade Information (BfAI) in Cologne, German export of ecotechnology to China has increased in the last few years and reached a value of DM392 million in 1992. Half of this amount consisted of high-tech products from the metrological, regulating and control technologies.

By the year 2000 the Chinese government hopes to have invested a total of 200 billion yuan, approximately DM40 billion, in environmental protection. But in the opinion of experts that will only suffice to eliminate the worst damage. China's environmental crisis cannot be overcome by environmental repair alone. As early as 1989 the Institute for Ecological Research of the Chinese Academy of Sciences issued this warning: it is not an increase in the gross national product but planning for the future that must be the highest political goal. So far this admonition has fallen on deaf ears: between 1989 and 1993 economic growth increased from 4 percent to 13 percent.

China Rejected Chemical Waste Exported by South Korean Company

40101005A Beijing CHINA DAILY [NATIONAL] in English 8 Mar 94 p 3

[Text] Chemical wastes that have been parked in limbo for the past five months in Jiangsu Province have all been sent back, the Shanghai-based Wenhui Daily reported on Sunday.

The chemical wastes, imported under the guise of "industrial-use fuel," were believed to be harmful to the environment.

While the wastes remained at the Shangyuanmen berth in Jiangsu's capital, Nanjing, vigilant environmental monitoring ensured that the water in that stretch of the Yangtze River and the nearby Shangyuanmen Water Plant were not contaminated by the chemicals, the newspaper reported.

The "fuel" was sold to the Shanghai Huafu Industrial and Commercial Company for \$27 per ton through a contract with a South Korean company signed last August.

According to the contract, 200,000 tons industrial fuel were to be imported between 1993 and 1995.

The first batch of "fuel" arrived at the Nanjing port last September. But inspections showed that most of the 1,288-ton shipment was harmful chemical wastes.

Customs officials at Nanjing Port sealed up the cargo immediately and asked the importers to return the wastes. After half a year's negotiation, the South Korean company eventually agreed to take back the wastes.

But that was not the end of the story.

According to Saturday's China Environment News, a representative from the company in South Korea declared that they had sufficient evidence to show that it was their

Chinese counterpart who asked to buy chemical wastes from South Korea. The Chinese side, however, said that it was the Korean company who violated the contract.

A spokesman from the National Environmental Protection Agency (NEPA) reiterated that the event was a typical trans-national waste-dumping incident.

He said that NEPA has taken actions against companies that profit by importing and processing harmful waste from other countries.

In March 1991, NEPA and the General Administration of Customs prohibited the import of industrial wastes harmful to the environment. The regulations have been enforced in many parts of the country and have played a big role in preserving the environment.

As one example, Southeast China's Fujian Province has several times rejected attempts to import overseas rubbish into the province.

(CD News)

Eight Environmental Projects Planned for Industrial Pollution Control

40101005B Beijing CHINA DAILY in English
10 Mar 94 p 1

[Article by Zhu Baoxia: "State Plans Massive Assault on Pollution"]

[Text] The government plans to develop eight major environmental projects in the next three years in a bid to control industrial pollution by the turn of the century.

The schemes will be supported by international financial organizations including the World Bank, the Asian Development Bank and Global Environmental Facilities (GEF).

Up to \$1.2 billion is needed to launch the projects which will treat water and air pollution and dispose of solid waste, said an official from the Foreign Economic Cooperation Office of the National Environmental Protection Agency (NEPA).

The prevention of acid rain and studies on the environment are also high on the list of the planned projects.

NEPA is due to get grants of \$200 million to \$300 million from GEF to control greenhouse gases and to protect bio-diversity.

The agency is now selecting suitable projects around the country. Its reports will be sent to the international organizations for further evaluation.

NEPA officials hope the eight projects will solve environmental problems which damage people's health, like pollution in Lake Dianchi in Yunnan Province and Lake Chaohu in Anhui Province.

They also hope the projects will check the spread of acid rain in the south of the country.

In recent years, China has worked more and more with international organizations on the environment.

By the end of last year, NEPA had set up 21 Sino-foreign environmental protection projects.

The World Bank and the Asian Development Bank had loaned the agency \$1.14 billion by 1993 and together with the GEF, they had granted China \$65.61 million for environmental protection and research.

The funding helped environmental protection schemes in Shanghai and Liaoning Province, research in Hangzhou Bay and studies on urban infrastructure throughout China.

It also helped to promote local environmental protection work and improve NEPA's administrative capacity, said Xie Zhenhua, the agency's director.

Cooperation between China and the international agencies has enabled the country to obtain advanced environmental protection facilities and improved its environmental information network.

Sky, Air Clearer Over Liaoning's Shenyang

0W0704111894 Beijing XINHUA in English
1049 GMT 7 Apr 94

[Text] Shenyang, April 7 (XINHUA)—The sky is clearer and the air cleaner in Shenyang, this once pollution-ridden capital of northeast China's Liaoning Province, according to the city's environmental agency.

Shenyang is one of the most important heavy industrial centers in China. The city's gross national product grew at an average annual rate of 15.6 percent to reach 37.45 billion yuan in 1993, an increase of 26 billion yuan over the 1986 figure.

The results of monitoring by the environmental agency show that annual mean value of the total suspended particles per cubic meter of air in 1993 was 0.434 mg, 0.87 mg less than in 1986, the amount of monthly dust fall per square kilometer in the year was 29.81 tons, 11.2 tons less than eight years ago and the annual value of the content of sulphur dioxide per standard square meter in the air was 0.122 mg, 0.037 mg less than eight years ago.

The city used more than 10 million tons of coal last year, accounting for 70 percent of the total amount of energy consumed.

The city has been working hard to eliminate pollution sources, especially soot and dust emitted by factories and family stoves. Restaurants in urban areas of the city are required to use clean fuels. More than 3,000 old-fashioned boilers have been replaced by modern central heating facilities.

Any enterprise whose discharge of wastes and dust exceeds the state set standards would be warned or fined.

The city authorities have also encouraged a tree planting campaign as part of the efforts to improve the environmental quality.

Song Jian Urges Tough Penalties for Environmental Crimes

OW0604115194 Beijing XINHUA in English
1105 GMT 6 Apr 94

[Text] Beijing, April 6, (XINHUA)—China will take tougher action against conduct severely violating the laws and regulations on environmental protection and will mete out stern punishment to those involved in violations that result in grave consequences.

This was outlined by senior officials from the National People's Congress (NPC) and the State Council here today.

Speaking at a conference of the NPC's Environment and Resources Protection Committee, NPC Vice-President Wang Bingqian said that new pollution sources have joined old ones to compound the country's deteriorating environment, due to local environment protection violations in the process of launching new construction projects.

He said rampant poaching, killing, selling and buying of endangered and rare animals which are under national protection are still going on in some places, adding that small and poorly equipped cement plants, paper mills, petrochemical works and smelting furnaces, though strictly forbidden by law, have staged a comeback in parts of China.

Such cases of violating environment protection laws must not be ducked but rather be resolutely and promptly dealt with, the official noted.

Song Jian, state councillor and director of the State Council Environment Protection Committee, said that China's environment protection laws need to be modified to include criminal penalties. Violators should be punished as severely as smugglers and drug traffickers. He added that detention and sentences must be meted out to those who deserve them.

According to a summary report delivered to the meeting by Xie Zhenhua, director of the State Environment Protection Bureau, illegal poaching, killing, smuggling, selling and buying of protected wild animals have survived repeated government sweeps, and hotels and restaurants in some areas are still making a fortune out of dishes based on rare animals.

The report pointed out that some places have introduced from abroad projects that fall short of Chinese environment protection requirements, while other places have even imported from outside China harmful waste.

Xie said that technologically poor equipment and a lack of counter-pollution measures in many rural enterprises account for severe environmental pollution and ecological disturbance in a wide range of areas.

He said that one of the major problems most complained of by urban residents is the pollution caused by waste water, waste gas, rubbish and noise, which, along with the boom in the service industry, have emerged as a hard nut to crack.

Some localities have eagerly launched high energy-consuming and pollution-prone projects at the cost of environment deterioration to pursue short-term economic benefits, the official said.

According to the Chinese official, the air quality in only a few of the country's 500 major cities has reached the state-set first-grade standard. He said that South China has been plagued by the pollution of acid rain, adding that economic losses from acid rain can add up to more than 14 billion yuan in Guangdong and Sichuan Provinces.

Official sources said that relevant departments with the NPC and State Council this year will organize ten environment inspection teams, which will travel to Hebei, Jilin, Zhejiang, Fujian, Henan, Hunan, Sichuan and Guizhou Provinces and Inner Mongolia and Guangxi Zhuang Autonomous Regions to handle cases of environment violations.

Measures Aid Survival of Endangered Animals

OW0304045694 Beijing XINHUA in English
0134 GMT 3 Apr 94

[Text] Harbin, April 3 (XINHUA)—Wild Siberian tigers, which were thought to be on the verge of extinction until recently, are being sighted more and more frequently nowadays in northeast China, due to expanding local forest coverage and meticulous human protective measures.

Miao Liping, a worker with the Dongfanghong Forestry Bureau in Heilongjiang Province, and other passengers on a bus saw a female Siberian tiger and three cubs drinking from a spring near the Qiyuan Forest Farm not so long ago. The cubs were each about one m long and 50 cm tall. They were so leisurely as if they knew that they were specially protected by the government and people.

There have also been reports that the endangered animals were recently seen in the Xiao Hinggan Mountains, Wanda Mountains and Laoye Ridge, also in Heilongjiang Province.

The tiger used to be regarded as the "king" of the animal world in China but human beings proved to be more powerful. As human activities expanded, the number of tigers was reduced drastically until the government and people in the country urgently adopted measures to protect the tiger and other endangered animals in the past decades so as to maintain ecological balance.

The Siberian tiger has also been listed as the most endangered of ten species of wild animals by the World Wildlife Fund International. It is the largest among all the ten species of tigers in the world.

A group of wildlife experts from the northeast China Forestry University confirmed that the number of wild Siberian tigers in China has increased to nearly 100 from the 1990 figure of 30. The experts have been keeping tract of the animal since 1980.

There are now less than 300 wild Siberian tigers in the whole world, exclusively in northeast China and Siberia. More are being bred in captivity.

According to experts, a Siberian tiger usually needs an area of a dozen sq km of forest to survive. It lives alone and is particular about selecting a spouse. An estrous female Siberian tiger has often to wander a vast distance before finding a male tiger. If the two tigers do not get along with each other, the female tiger has to look for another male tiger. Very often, before the female tiger finds a spouse, her estrus has passed. The difficulty for the animal to mate limits its number in the wild.

China has listed the tiger as a first-class protected animal since the early 1950s. Hunting of the tiger and trading in products made from tigers have been banned. In 1989 Zhang Guojun and two other farmers were sentenced to six years in prison for killing a Siberian tiger. In January this year 50 kg of tiger bones confiscated from smugglers and destined for use in traditional Chinese medicinal recipes were burned.

The country has also set up several nature forest reserves with a total acreage of 100,000 ha. The oldest one was established in Heilongjiang in 1958. In 1986 the China Administrative Office in Charge of Endangered, Rare and Precious Animals and the Heilongjiang Provincial Government invested over 10 million yuan (about 1.2 million U.S. dollars) to establish a breeding center in a mountainous forest at Hengdaohezi in Hailin County, Heilongjiang, to raise Siberian tigers in captivity. The annual expenses for feed, equipment and medical treatment in the center surpasses three million yuan. The initial population of five male and 15 female Siberian tigers at the center were collected from zoos in Beijing, Shanghai, Chengdu and Guangzhou.

Tigers at the center are fed at 3:30 p.m. in the spring, fall and winter, and at 4:00 p.m. in summer. A total of three head of cattle are slaughtered to feed them daily. In addition, nutritional materials such as milk, eggs, liver, mutton, pork bones, racoon meat, yeast, multivitamins and dog meat are added to their food.

However, feeding is withheld on Sunday to increase their ability to endure the torments of hunger, as in the wild. On

Fridays they are fed live food, mainly chickens and rabbits, to maintain their preying ability. "This is to pave the way for their return to the wild," said Liu Xinchen, director of the center.

It has been reported that the estrus, mating and whelping phases of the Siberian tiger are strongly seasonal. However, Director Liu said, this seasonal behavior can be changed by using scientific management and nutrients. The tigers can be in estrus, mate, be pregnant and whelp in every season, with the peak birth rate occurring from June to August. The gestation periods of 12 pregnancies at the center so far has been 107 to 108 days.

Scientists at the center also noted that when a male tiger was permitted to mate with five females at will, it mated 333 times over 35 days, resulting in three whelpings. By adopting a managed mating method or separating the male and female tigers for 12 hours after each mating, however, all five females whelped, although merely 51 matings were allowed in 24 days. Moreover, eight cubs were produced from the natural method and 14 from the managed method.

The tiger in captivity also selects its spouse carefully, Director Liu stressed. The technicians have to transfer a male tiger to the neighboring shed of a female tiger to let them get familiar with each other first. Even so, many of the neighboring tigers fail to mate.

A male tiger called "Beijing Prince," which was transferred from the Beijing Zoo to the center in 1986, refused to mate with female tiger no. 001 in 1987. Later, it was introduced to female tiger no. 014. Since then, "Beijing Prince" has never shown any interest in any other female tiger.

After seven years of effort, the center has succeeded in increasing its initial tiger population to 73. During this period 67 cubs in 28 litters have been born, and 58 have survived. Female tiger no. 010 has given birth to 25 cubs in seven litters, with the largest litter size being five. The tiger has been honored as a "Heroic Mother." Both the litter size and the survival rate are records and the center is now the largest of its kind in the world.

Director Liu revealed that the center has mapped out a program to send the tigers raised in captivity back to the wild. It is expected to return some of them to nature by the year 2003.

INDONESIA

Ten Companies Reportedly Import Toxic Waste

*BK0304131094 Jakarta KOMPAS in Indonesian
18 Mar 94 p 14*

[Excerpts] Jakarta, KOMPAS—After conducting investigations from October 1993 to February this year, an environment protection group, Wahana Lingkungan Hidup Indonesia [Indonesian Environment Vehicle or Walhi], managed to identify 10 local companies which imported dangerous and toxic plastic waste. Walhi urged the government to take action against these companies by pressuring them to return the toxic waste to the country of origin, and if necessary, take legal action against them.

Walhi's program director Muhammad Sifaudin Zulkarnaen disclosed the findings to reporters at his office in Jakarta on 17 March. Zulkarnaen was accompanied at the news conference by Walhi's information manager, Lili Hasannudin.

The 10 companies are based in Jakarta and have imported at least 68 containers of plastic waste through Tanjung Priuk Port since 25 November 1992. In Ministerial Decree No. 349 dated 21 November 1992, the trade minister banned the import of industrial waste or plastic waste into the country effective 25 November 1992. [passage omitted]

The list of companies importing dangerous and toxic plastic waste since 25 November 1992:

Company Name	Address	Type of Waste	Number of Containers
Indopolimer Recycling Makmur Co., Ltd.	KH Mas Mansyur Street, Jakarta	household waste	8
		heavy metal waste	3
Esa Setia Raya Abadi Co., Ltd.	Mangga Dua Abadi Street, Jakarta	household waste	7
		clinical waste	2
Sarana Gapura Merapi Co., Ltd.	Duta Merlin Complex, Jakarta	household waste	8
		muddy plastic waste	1
Degamitra Utama Co., Ltd.	Teluk Gong Street, Jakarta	heavy metal waste	2
		clinical waste	1
Citramesa Indo Abadi Co., Ltd.	Keselamatan Street, Jakarta	clinical waste	1
Meiwa Indonesia Co., Ltd.	Karet Tengsin Street, Jakarta	clinical waste	1
Wicaksana Makmur Co., Ltd.	Sosial Street, Jakarta	household waste	10

New Ship Nusa Bersama Co., Ltd.	Sampurna Plaza, Jakarta	household waste	2
Seribu Kumala Co., Ltd.	Palmerah Utara Street, Jakarta	heavy metal waste	2
Harta Hariman Co., Ltd.	Martadinata Street, Jakarta	household waste	18
		household waste mixed with plastic	
		waste of corrosive packaging materials	1
		household waste mixed with organic solution	1

Zulkarnaen said his group's investigation results are dependable. Walhi based its investigations on authentic shipping documents, which had been used to import the waste into the country. The documents revealed the identity of the importing companies as well as the number of containers they ordered. The containers were then checked and those found to have dangerous and toxic waste had the owner's name put in the list. Walhi also contacted each company to check the accuracy of its investigations. [passage omitted]

JAPAN

Tokyo To Host Mideast Environment Talks in The Hague

*OW0104092194 Tokyo KYODO in English 0816 GMT
1 Apr 94*

[Text] Tokyo, April 1 KYODO—Japan will host a working group meeting on the environment in the multilateral track of the Middle East peace process on Wednesday and Thursday [6-7 April] in The Hague, the Netherlands, the Foreign Ministry said Friday.

The meeting's co-sponsors, the United States and Russia, have sent invitations to the meeting to more than 40 countries or organizations including the parties directly concerned in the negotiations, Arab nations and European countries, the ministry said.

Participants will discuss management and public awareness of the environment, sewage and solid waste disposal, emergency preparedness and prevention of marine pollution, and desertification control, to promote environmental conservation in the middle east, it said.

Toshinori Shigeie, deputy director general of the Foreign Ministry's Middle Eastern and African Affairs Bureau, and officials from ministry and other relevant ministries will attend, it said. [as received]

The working group on environment is one of the five working groups under the Middle East multilateral peace process which started in 1992 in Moscow.

The other four working groups are on economic development, arms control and regional security, water resources and refugees.

Tokyo Gives Aid to Kazakhstan To Dismantle Nuclear Arms

OW0704145294 Tokyo KYODO in English 1433 GMT
7 Apr 94

[Text] Tokyo, April 7 KYODO—Prime Minister Morihiro Hosokawa said Thursday [7 April] Japan will allocate \$11 million to Kazakhstan to help dismantle its nuclear weapons, Foreign Ministry officials said.

Hosokawa made the announcement in a meeting with Kazakhstan President Nursultan Nazarbayev, who arrived in Japan on Wednesday for a four-day visit.

The amount is part of a total of \$100 million Japan pledged last year to help four former Soviet republics—Russia, Ukraine, Belarus and Kazakhstan—dismantle their nuclear weapons.

The officials said detailed use of the \$11 million will be decided in discussions between the two sides at a committee on cooperation for the destruction of nuclear weapons.

Hosokawa praised Kazakhstan's efforts to denuclearize, democratize and shift toward a market-oriented economy, they said.

Kazakhstan joined the Nuclear Nonproliferation Treaty (NPT) as a nonnuclear weapon state last November.

Nazarbayev, 53, asked for Japanese cooperation in helping his country tackle environmental pollution at the Semipalatinsk nuclear testing site and in the Aral Sea, the officials said.

Specifically, he requested cooperation in providing medical equipment for hospitals treating people exposed to radioactivity near Semipalatinsk.

Hosokawa said Japan will seriously consider cooperation with the hospitals, which the ministry officials said is expected to be covered by the \$11 million.

An estimated 233 million tons of radioactive substances are believed to be left in Kazakhstan.

As for environmental problems in the Aral Sea, Hosokawa said the problem should be solved internationally but added Japan would study what it can do, the officials said.

Also during the 30-minute meeting, followed by an hour-long dinner, Nazarbayev, 53, said he supports Japan's bid to become a permanent member of the UN Security Council.

A joint statement signed by the two leaders prior to the meeting said Kazakhstan "expressed the hope" that Japan would become a permanent member of the Security Council and "fulfill its relevant responsibilities."

Hosokawa told Nazarbayev Japan intends to fulfill its responsibilities within its capabilities, the officials said.

On the international front, the Kazakhstan president proposed holding a conference covering the whole of Asia to build trust.

Hosokawa agreed on the importance of creating trust in Asia but expressed reluctance to set up a forum covering the whole region such as the conference on Security and Cooperation in Europe (CSCE).

Nazarbayev asked Japan to offer its manufacturing technology to Central Asia and suggested setting up a committee between Japan and Kazakhstan to study such a possibility.

Hosokawa suggested the two sides utilize the existing bilateral economic committee.

Nazarbayev also offered a list of 1,394 Japanese prisoners of war detained in Siberia who died in Kazakhstan, the officials said.

On Friday, Nazarbayev is to meet Emperor Akihito and Empress Michiko and give a press conference later in the day.

Panel To Set Industrial Environmental Guidelines

OW0704131394 Tokyo KYODO in English 1236 GMT
7 Apr 94

[Text] Tokyo, April 7 KYODO—A government panel Thursday [7 April] began formulating industrial guidelines for environmental protection, panel officials said.

An organ of the Industrial Structure Council, an advisory body to the international trade and industry minister, held its first meeting to prepare a set of industrial rules for protecting the earth's environment in such areas as industrial wastes and chemical pollutants such as carbon dioxide emissions.

A report to be announced in early June will address the importance of sector-by-sector responsibility by Japanese businesses for the disposal of harmful chemicals and byproducts throughout all stages of business activities from materials purchases to manufacturing, distribution and the end-use of products, ministry officials said.

The report will also call for businesses to establish technologies to enable secondary use of both industrial and household waste.

The panel will hold three more meetings before releasing the report entitled, "An Industrial Vision of the Environment," on 8 June.

Tokyo To Continue Dumping Industrial Waste at Sea

OW0704113694 Tokyo KYODO in English 0955 GMT
7 Apr 94

[Text] Tokyo, April 7 KYODO—Japan will continue to dump industrial waste in the ocean despite revision of an international treaty which in principle will ban such activities from 1996, Environment Agency sources said Thursday [7 April].

The volume of Japan's industrial waste dumped at sea accounts for two-thirds of the world's total.

The government reviewed its dumping in light of the revision in the convention on the prevention of marine pollution by dumping of wastes and other matters. Even so, it decided to endorse dumping of about 80 percent of industrial waste currently dumped at sea, the sources said.

The material includes construction waste, sewage sludge and fluid from the manufacture of clear distilled liquor, they said.

The government judged that most industrial wastes dumped in the ocean corresponds to materials still permitted by the revision, the sources said.

The convention was revised at a signatory nations' meeting in November. Exceptions to the ban include materials such as dredged waste, sewage sludge, uncontaminated inert geological materials and uncontaminated organic materials of natural origin.

The revision leaves each country to judge what will correspond to the exceptions.

Currently, Japan annually dumps about 4.4 million tons of industrial waste, including 2.8 million tons of sludge and 1.3 tons of waste fluid, they said.

The government decided to ban dumping of waste fluid from photo processing and some sludge from sewage and construction, but the volume of the industrial wastes to be reduced will be not more than 900,000 tons, or 20 percent of current volume, they said.

The sources said the decision is a provisional measure because the convention may ban all industrial waste dumping without exception after 1996.

Spokesman Urges Russia To Cease Dumping Nuclear Waste

OW0504081294 Tokyo KYODO in English 0724 GMT 5 Apr 94

[Text] Tokyo, April 5 KYODO—Japan renewed calls on Russia on Tuesday [5 April] to totally ban dumping of radioactive wastes in the Sea of Japan and work out as early as possible a plan to construct emergency storage and small-scale processing facilities.

Commenting on reports that Russia may resume the dumping in the Sea of Japan next month, Foreign Ministry spokesman Terusuke Terada said Japan "strongly hopes" that Russia will totally ban the ocean dumping by establishing the facilities for low-level liquid radioactive wastes.

Japan has repeatedly told Russia it is ready to help set up such facilities by using funds allocated to a bilateral committee for cooperation on the destruction of nuclear weapons in Russia, Terada said.

"In order for us to carry out this project, it is a prerequisite that the Russian Government actually decides on a construction plan for emergency storage and small-scale processing facilities," Terada told reporters.

"We understand as a matter of fact that while we're engaged in dialogue to materialize this project, there will not be any ocean dumping by the Russian side," he said.

Last October, Russia dumped 800 tons of liquid radioactive waste in the Sea of Japan. It suspended its planned second dumping following protests from Japan and South Korea.

Russia's Pacific Fleet indicated it may resume dumping nuclear waste in the Sea of Japan in May because its tanker TNT-5, loaded with about 500 tons of radioactive waste, is decaying and the risk of leakage of the waste is increasing.

Reclamation Project in Hakata Bay Gets Go-Ahead

OW0804041694 Tokyo KYODO in English 0327 GMT 8 Apr 94

[Text] Tokyo, April 8 KYODO—The Environment Agency endorsed a local government assessment Friday [8 April] that a planned reclamation project near a tideland internationally recognized as an important waterfowl habitat will have little effect on the birds.

The agency put its seal of approval on Fukuoka city's assessment concerning the construction of an artificial island in Hakata Bay, off the Wajiro tideland, clearing the way for the controversial project.

The agency nevertheless submitted a statement to the Transport Ministry, making a strong call for the preservation of waterfowl habitat conditions throughout the entire bay, on Japan's southwestern island of Kyushu.

The agency's approval paved the way for the ministry's permission for the 460 billion yen project, which is expected later Friday.

The ministry plans to call on Fukuoka to prepare for registration of the tideland with the Ramsar Convention to preserve waterfowl and other wildlife.

The project, to create a research and housing complex on a 400-hectare tract of reclaimed land, is expected to start at the end of June.

The Wajiro tideland is known as a wintering site for many water birds, some of them endangered species.

The project has drawn opposition from environmentalists at home and abroad.

Besides the preservation of living conditions for waterfowl, the agency also called for keeping the water clean in Hakata Bay and for long-term surveillance of the regional environment for a review of the assessment after five years.

Environment Agency Director General Wakako Hironaka said her agency will seek Fukuoka's efforts to acquire the cooperation of local communities to register the entire Hakata Bay with the Ramsar Convention.

The Wajiro tideland preserves much more nature than the Yatsu tideland in Chiba Prefecture, which is already registered with the convention, she said.

"I believe the environmental protection in the region can be compatible with the (reclamation) project but I would like to ask for reconsideration if it greatly affects the ecosystem."

LAOS

Environmental Impact of Planned Resort Worries Officials

*BK0704072894 Bangkok THE NATION in English
7 Apr 94 p A4*

[Text] Vientiane—Laotian officials have expressed concern about the feasibility of the proposed Khon Phapheng Resort mega project at Li Phi falls in the southern province of Champassak.

Thai developers plan to invest in the Bt [baht] 12 billion tourism development, which would comprise an international airport, a 10-megawatt hydropower station, 100,000-hectares of eucalyptus plantations, two 18-hole golf courses, a 1,200-room hotel, 1,000 resort units and a casino.

An official in Vientiane who asked not to be named said the area is plagued with Schistosomiasis disease, better known as blood fluke.

"We are suspicious of how the project is going to bring in tourists as Schistosomiasis is widespread, unless the project has a plan to eliminate the disease first," said the officer.

"We are concerned that the project might fail, after having already irreversibly destroyed nature in Laos," he said.

Chanthaviphon Inthavon, deputy director of the National Office for Nature Conservation and Watershed Management in Vientiane, said he was worried about the proposal to transform 100,000 hectare of dry deciduous forest into eucalyptus plantations.

"It is too ambitious," he said.

Chanthaviphon said the nature conservation committee had suggested the area planted to eucalyptus should be scaled down.

"We recommended that only a limited area, not full scale development, for the plantations project should be approved as a study whether it will really work," he said.

Dr. Tysons Robert, a fish biologist of Mahidon University and one of the few scientists studying the Lower Mekong Basin, said the project's impact on fish and riverine ecology is among major environmental concerns.

Robert said the location of Li Phi falls is unique in the whole Mekong system, with rapids extending over 3-5 kilometres.

"It is the only place where the main channel of the Mekong has such a big waterfall, separating the lower river from the upper river. So it provides a lot of habitats in a long place and fish are different," said Robert.

"Waterfalls or rapids are healthy places for fish. It's good for food, with a lot of oxygen. Many fish prefer to live in places with fast flowing water and a rocky habitat. There are more fish than other places."

Robert said the proposed golf course would probably be kept green through the use of chemical fertilizers and pesticides, as well as water from the mainstream Mekong. All of this could affect the fish ecology in the area.

"Water draining from the golf course, which has a lot of strange chemicals in it, could have a very bad effect on fish," noted Robert.

Another Laotian official told THE NATION that the small hydro-power station will be located at the edge of Khon Phapheng fall and will use a "floating generation system".

The Khon Phapheng resort is planned to be the first development project on the mainstream of the Lower Mekong Basin.

MALAYSIA

Hazardous Waste Exports From OECD Countries Banned

*BK3003093194 Kuala Lumpur BERNAMA in English
0354 GMT 30 Mar 94*

[Text] Kuala Lumpur, March 30 (OANA-BERNAMA)—The export of hazardous waste from the Organisation for Economic Cooperation and Development (OECD) countries to non-OECD countries has been banned with immediate effect.

The decision was reached during the second meeting of parties to the Basel convention on control of trans-boundary movement of hazardous wastes and disposal concluded in Geneva four days ago, after five days of intensive debate.

A Foreign Ministry statement said here Tuesday that the meeting also decided that the export of hazardous waste from OECD countries, destined for recovery or recycling in non-OECD countries, should also cease on 31 December 1997, at the latest.

The consensus was reached after long and difficult negotiations between the Group of 77, a grouping of developing nations and China, and leading opponent OECD countries led by Australia, Canada, Japan and the United States, it added.

Science, Technology and Environment Minister Law Hieng Ding, who led the Malaysian delegation to the meeting, and his Danish counterpart played a key role in steering the political direction and decision in arriving at the landmark agreement, it said.

In his address at the meeting, Law labelled the export of hazardous waste to developing countries as environmental crime, the statement said.

He called on the OECD countries to uphold environmental justice and assist developing countries in environmental capacity building, it said.

Law also informed the meeting about the illegal dumping of toxic tanker sludge in Malaysian waters and the attempt to seek exclusion of control under the Basel Convention.

He said stern enforcement action would continue to be taken against any ship or tankers engaging in such activities in accordance with Malaysia's interpretation of the convention.

Law warned that such ships would be detained and auctioned under Malaysian laws.

NEW ZEALAND

Agreement With UK To Help Pay Nauru Compensation

BK2903072194 Hong Kong AFP in English 2208 GMT 28 Mar 94

[Text] Wellington, March 29 (AFP)—New Zealand and Britain are to each pay 12 million NZ dollars (6.8 million U.S. dollars) in compensation to the central Pacific republic of Nauru, Foreign Minister Don McKinnon said Tuesday.

The payment, to be made to Australia, was the two countries' contribution towards settlement of an International Court of Justice (ICJ) case brought by Nauru.

Australian Prime Minister Paul Keating last year announced Canberra would pay 107 million Australian dollars (75 million U.S.) to Nauru to assist in rehabilitation of the island, severely strip mined for its phosphate under colonial rule.

Australia, New Zealand and Britain shared rule of Nauru from 1914 to 1968 and, under the quasi-government British Phosphate Commission (BPC), took the phosphate at very low prices, while paying nothing to repair the land.

After Keating made the sudden offer as Nauru prepared to take Australia to the ICJ. [sentence as received]

"Australia had sought appropriate contributions from New Zealand and the United Kingdom and the level of contribution has now been agreed," McKinnon said.

He said Britain had already paid Australia and Wellington would do so shortly.

Nauru has not ruled out the possibility of taking separate action against London and Wellington, but if Tuesday's contribution is all the two countries now have to pay they will have done much better in the deal than Canberra did.

Given that the BPC was controlled by a representative each from the three powers, and its resources were shared, Australia could have asked for as much as 36 million dollars from both London and Wellington.

Nauru, a former German colony, was extensively mined by the BPC, in contravention of the League of Nations, and later United Nations, mandate.

BPC's operations were a state secret and details never revealed at the time.

It was both the buyer and seller of phosphate, rigging the price to subsidize farmers and publishing two sets of books—one for the League and another secret set showing the real picture.

In preliminary pleadings to the ICJ in 1990 Australia objected to the court dealing with the case on the grounds of lack of jurisdiction, bad faith on Nauru's part, and failure to join New Zealand and Britain as parties.

Australia argued a full and final settlement was reached at the time of independence in 1968.

Although the colonial powers were committed to rehabilitation in law, nothing was done and 21 square kilometre (8.4 square mile) Nauru is largely a wasteland, its 9,600 people living on a narrow coastal strip.

PHILIPPINES

Ilocos Region Gets Environmental Protection Agency

BK3003093794 Quezon City MALAYA in English 24 Mar 94 p 13

[Text] The Inter Agency Task Force for Coastal Environmental Protection for the Ilocos region was recently activated during a coordinating conference held at the headquarters of the Naval District I in San Fernando, La Union.

Commodore Nicasio Blancas, naval district I commander, said the task force had chosen Lingayen Gulf as its pilot project.

The inter-agency task force was activated following a presidential order to protect the country's coastal waters from all forms of destructive fishing, over exploitation and pollution.

The task force is composed of the Departments of Interior and Local Government, Environment and Natural Resources, Agriculture, Justice, Philippine National Police and the National Economic Development Authority.

Environment Department Launches Project To Aid Ecosystem

BK0404122694 Quezon City GMA-7 Radio-Television Arts Network in Tagalog 0930 GMT 4 Apr 94

[Text] The Department of Environment and Natural Resources [DENR] Ecosystem Research and Development Bureau has launched today a project for the trial plantation of Nilad—a mangrove species—that will be planted for the greening and luxuriant growth of the environment's ecosystem.

This was witnessed by DENR Secretary Angel Alcala, Manila Mayor Alfredo Lim, and other government officials. The launching of the project was held in Puerto, Parian.

Ramos Creates Task Force on Solid Waste Management

*BK0804041494 Manila MANILA STANDARD
in English 3 Apr 94 p 5*

[By Joem H. Macaspac]

[Text] President Ramos took a direct hand in his administration's waste management program yesterday and created a top-level committee composed of six Cabinet secretaries to ensure the protection of the environment and the proper disposal of waste materials.

At the same time, the Chief Executive disclosed that the country received a total of \$32.71 million worth of assistance from the European Community (EC) for 1994. The money will be used on projects that will protect the environment and preserve the country's natural resources.

The president's move was contained in Memorandum Circular (MC) No. 88 which reconstituted the Presidential Task Force on Waste Management to ensure effective implementation of its various programs and projects.

The new memorandum amended MC 39-A issued by then, President Corazon C. Aquino on 19 January 1988 which designated the Presidential Management Staff as the task force coordinator.

Under MC 88, President Ramos designated Environment and Natural Resources Secretary Angel Alcala as chairman, with Public Works and Highways Secretary Gregorio Vigilar, Health Secretary Juan Flavier, Economic Planning Secretary Cielito Habito, Trade Secretary Rizalino Navarro and Interior and Local Government Secretary Rafael Alunan III as members.

The reconstituted task force, the president said, will have the following modified functions and responsibilities:

- Ensure the implementation of the Integrated National Solid Waste Management Systems Framework as approved for adoption during the Cabinet meeting on 19 October 1993;
- Ensure the continuous coordination and compliance by concerned agencies on the matter as well as on the various policies and presidential directives issued on waste management;
- Formulate and recommend to the president all policies pertinent to the framework plan;
- Serve as policy and management board for the Project Management Office on Solid Waste Management created under Administrative Order No. 90;
- Source the financial and technical requirements of the plan from appropriate entities;
- Create the necessary Technical Working Groups/ Committees to assist the task force in the plan's implementation;
- Submit quarterly reports to the president; and
- Perform other functions as maybe directed by the president.

President Ramos tasked the DENR [Department of Environment and Natural Resources] to provide technical and administrative support to the task force.

In a report to the president, National Economic and Development Authority (NEDA) Director General Cielito Habito said the EC assistance will go to the preservation of natural parks, integrated protected areas and industrial pollution abatement.

Aside from boosting the government's environmental protection program, the EC assistance for 1994 will enhance institutional linkages, investment promotion, agrarian reform implementation and coconut processing, Habito reported.

The Chief Executive was also informed that a high-level business conference is expected to be held in Europe in September or October this year.

"This will explore possible business opportunities between the Philippines and EC countries. Hopefully, the conference will bear fruitful results in upgrading Philippine-EC trade relations," Habito said.

The EC infused a total of \$75.37 million in the country last year which mostly financed rural development projects in Western Samar, Catanduanes, Aurora, Guimaras, Biliran, Bantayan, the Camotes and Pitogo.

The private sector also received grant financing for a packaging center and assistance to the computer software industry, which reflected greater private sector access to official development assistance," Habito said.

Habito also informed the president that the EC has expressed interest in initiating regular high level consultations to review pipeline projects as well as its ongoing projects.

The first consultation might be held this May, he said.

TAIWAN

Taipei To Attend CITES Meeting in Beijing

*OW2903150194 Taipei CNA in English 1303 GMT
29 Mar 94*

[By Sofia Wu]

[Text] Taipei, March 29 (CNA)—Taiwan will send representatives to a United Nations-sponsored meeting on illicit trade and consumption of endangered animals scheduled to be held in Beijing in May, a government official said Tuesday [29 March].

"We'll only attend the non-government organization (NGO) sessions of the UN's Convention on International Trade in Endangered Species (CITES)," said Huang Ying-jay, a department chief at the Council of Agriculture (COA).

The NGO sessions are open to non-CITES members. Taiwan is not a member of the UN wildlife conservation organization.

The 16-18 May CITES meeting will focus on how to eliminate the use of bear bile in Chinese medicines, Huang said. Several bear species native to Asia face the threat of extinction.

"We'll detail our conservation programs for indigenous Taiwan bears and other endangered wild animals at the NGO sessions," Huang explained. He added that Taiwan will not send representatives to a CITES meeting on illicit flora trade scheduled for 16-19 May in Mexico.

Taiwan for the first time attended the NGO sessions held in Geneva earlier this month in connection with a CITES Standing Committee meeting. It also managed to escape immediate CITES trade sanctions for its alleged failure to stamp out tiger bone and rhino horn trade.

The UN organization agreed to give Taiwan more time to improve its wildlife conservation measures, and will decide whether to impose trade sanctions on Taiwan in November, when all CITES members will meet.

The United States has agreed to follow the CITES decision and wait for some time before deciding whether to retaliate against Taiwan in accordance with the [word indistinct] legislation meant to protect wildlife.

The U.S. has also asked Taiwan to send reports on its conservation programs for some Asian indigenous animals, including black bears and orangutans, before 25 April, the sources said.

Taipei Wants U.S. To Acknowledge Conservation Progress

OW3003122294 Taipei CNA in English 0746 GMT
30 Mar 94

[By Sofia Wu]

[Text] Taipei, March 30 (CNA)—A senior Taiwan official Wednesday [30 March] urged the United States to make careful assessment before deciding whether to sanction Taiwan over wildlife conservation issues.

"We hope the U.S. Government and private conservation organizations can acknowledge the progress we have made in wildlife conservation in recent years," said Vice Chairman Lin Shiang-nung of the Council of Agriculture (COA).

The Clinton administration is scheduled to decide in April whether to impose trade sanctions on Taiwan in accordance with the U.S. legislation meant to protect wildlife, known as the Pelly Amendments.

Some local media quoted COA sources as reporting Tuesday that the U.S. Government has agreed to follow a recent decision by a United Nations wildlife conservation organization to give Taiwan more time to improve its conservation measures before taking any punitive measures against Taiwan for its failure to stamp out its alleged tiger bone and rhino horn trade.

Lin, however, denied the reports, saying the council has not received any information about a final U.S. decision. "I know nothing about whether the U.S. will follow the

CITES [Convention on International Trade in Endangered Species] decision," he noted.

Nevertheless, Lin said he earnestly hopes America can take note of Taiwan's conservation efforts and technically assist Taiwan to eliminate illicit wildlife product trade.

"We'll continue to crack down on illicit rhino horn and tiger bone trade and hope to cooperate with the U.S. in wildlife conservation," he added.

The UN's Convention on International Trade in Endangered Species (CITES) recently agreed to postpone a decision on whether to sanction Taiwan until November.

Taipei Representative Reaffirms Commitment to Conservation

OW3103101194 Taipei CNA in English 0713 GMT
31 Mar 94

[By Bill Wang]

[Text] Washington, March 30 (CNA)—The ROC [Republic of China] Government has reaffirmed its commitment to eradicating the trade in endangered species. The ROC representative's office in Washington said Wednesday [30 March] that the ROC Government shares the U.S. Government's commitment to eradicating the illegal wildlife trade, but believes dialogue and cooperation, rather than sanctions, are the best means of achieving progress toward this goal.

The office issued the statement in response to a news release sent out by Senator Jim Jeffords (R-VT.) in which the senator said that 25 senators and 13 representatives have joined him in forwarding a letter to President Bill Clinton asking him to consider taking limited trade sanctions against Taiwan and Mainland China for their continued illegal trade in rhino horn and tiger parts.

The office pointed out that the ROC Executive Yuan recently approved amendments to the Wildlife Conservation Law that would make trade in endangered species a crime punishable by prison terms up to five years and/or fines up to U.S. \$60,000.

In addition, it added, prison terms for repeat offenders would be lengthened to as much as seven years, and the maximum fine would increase to approximately U.S. \$100,000 under the amendments expected to be passed by the Legislative Yuan soon.

It said that the government has also been conducting island-wide crackdowns in Taiwan, involving undercover investigations on establishments selling traditional medicine.

It said that the efforts of the ROC Government were acknowledged at the meeting last week of the Standing Committee of the United Nations Convention on International Trade in Endangered Species (CITES). During the meeting, CITES decided that Taiwan should be given more time to implement wildlife conservation measures and postpone any decisions on sanctions to November.

Senator Jeffords also introduced legislation in the Senate calling for the setup of a fund to support conservation programs of nations whose activities affect rhino and tiger populations as well as automatic sanctions against nations violating endangered species laws.

Premier Terms U.S. Sanctions 'Unfair, Regretful'
*OW0104132894 Taipei CNA in English 1256 GMT
1 Apr 94*

[By Debbie Kuo]

[Text] Taipei April 1 (CNA)—Premier Lien Chan Friday [1 April] called United States threats to impose trade sanctions against Taiwan for failing to protect endangered species "unfair" and "regretful."

U.S. President Bill Clinton has yet to make a final decision on the sanctions, which are mandated under the Pelly amendment to the Fishermen's Protective Act of 1967. Any sanctions would go into effect 30 days after approval.

The ROC [Republic of China] Foreign Ministry confirmed that the U.S. National Security Council had forwarded to President Clinton a recommendation to sanction only Taiwan under the Pelly amendment.

Lien said it is unfair that the U.S. is seeking to selectively impose the sanctions, targeting only Taiwan and not Mainland China or South Korea.

The premier said the U.S. Government did not take into account wildlife conservation efforts made by Taiwan's government and people.

The U.S. has paid no attention to Taiwan's quick and effective reactions to comments and accusations from world conservation organizations, Lien said.

Lien added that Taiwan has done much more than many other governments and international groups in protecting endangered species.

Moreover, the government is currently expanding crackdowns on illegal trade in rhino horn, tiger parts and other endangered animals and species in addition to enacting a revised wildlife protection law and promoting Taiwan's efforts in the world community, Lien said.

He called for the people in Taiwan to correct their misguided ideas about the effects some endangered species have in curing diseases. "Don't sacrifice the country's image for medical cures or gourmet food," Lien said.

Meanwhile, Sun Ming-hsien, chairman of the Council of Agriculture, said the U.S. is targeting Taiwan alone for trade sanctions despite a decision by the Convention on International Trade in Endangered Species (CITES) last week to postpone any decision on sanctions against Taiwan, Mainland China and South Korea until November.

He called U.S. threats against Taiwan a "violation of international justice."

Sun said Taiwan will continuously and undauntedly communicate with the U.S., telling the Americans that Taiwan

has done much more than Mainland China and South Korea in wildlife protection and conservation.

Sun (?said) that he has not ruled out resignation to take responsibility for the U.S. sanctions, (?if) approved.

THAILAND

Prime Minister Supports Future Nuclear Power Option

*BK3103034394 Bangkok THE NATION in English
31 Mar 94 p A7*

[Text] Prime Minister Chuan Likphai is in favour of setting up nuclear power plants, saying the growing demand for electricity will inevitably force Thailand to adopt the nuclear option.

"Nuclear power is a sensitive issue and something very new for our country. People may not understand and accept it but we should not overlook it," he said.

Chuan presided over a seminar entitled "Nuclear Power Plants," held at Parliament yesterday. He said nuclear power could not be rejected since it is a vital new resource for generating electricity.

He said nuclear power had been used elsewhere for more than 20 years due to increasing demand for power worldwide.

Chuan said that 20 years ago, Thailand consumed only 1,000 megawatts of electricity. This year, demand has risen to 9,800 megawatts.

"And in 15-20 years, demand will be 30,000 megawatts," he said.

At present, Thailand has to import electricity from Laos and natural gas from Malaysia, Vietnam and Burma.

Although there were many other fossil fuels for electricity generation, the world was concerned about their environmental impact. He quoted the greenhouse effect, and acid rain as examples of problems caused by the burning of fossil fuels.

"The government is interested in nuclear power as one of a number of options for the future," he said.

He said he had instructed the Sciences Technology and Environment Ministry to amend the laws concerning nuclear power plants and to formulate an organizational structure to supervise the new industry.

"Everything must comply with international standards. We want to be sure people will be safe and that it will not affect the environment," he said.

He stressed that public sentiment over the issue was the most important factor.

"The government will study the positive and negative aspects of nuclear power plants. And we will pay prime attention to the public's feelings," he said.

The chairman of the House committee on energy, At-ong Chumsai na Ayutthaya, recently insisted on the need to

build nuclear power plants and criticized an opposing conclusion reached by the House environment committee.

"We have to select the best and safest system. Don't take bad examples which rely on one-sided information," he said.

A Phalang Tham (Bangkok) MP, At-ong said before deciding whether or not to build nuclear power plants, it is necessary to study the size of the country's remaining energy reserves.

"We have to accept that the energy demand is rising. The consumption of electricity increases by 1,000 megawatts yearly."

"We are not talking about a change which will happen today or tomorrow but we are focusing on the situation in 50 years, when other energy sources have already gone," he said.

Cancer in Children Attributed to Arsenic in Water

*BK0704071494 Bangkok THE NATION in English
7 Apr 94 p A8*

[Text] Seventeen percent of primary students in Ron Phibun district, Nakhon Si Thammarat province, suffer a form of skin cancer as a result of ingesting arsenic toxins in the local water, a Nakhon Si Thammarat provincial official said yesterday.

Eighty percent of all residents in Ron Phibun district and some residents in nearby districts have arsenic toxins in their bodies.

The official said local water supplies are polluted by arsenic in run-off from ancient tin mines.

Consumption of arsenic toxins results in an illness the villagers call Khai Dam, or black fever, and induces a kind of skin cancer which shows as black spots. A survey of 718 primary students showed 125 of them, or 17.4 percent, have black spots on their skin, according to the official.

The official said authorities on Tuesday had agreed to arrange new water sources for the villagers.

It was also planned to dig new water wells in Ron Phibun district and to educate villagers about black fever disease.

Dr. Chanphen Chupraphawan, from the Thai Public Health Research Institute, said providing clean, unpolluted water would be an effective way to prevent the spread of black fever.

Chanphen said within the next four years, teenagers in Ron Phibun will have an 80 percent risk of getting black fever, which could lead to cancer of the lung, kidney and liver.

Embassy Expects U.S. To Link GSP, Environmental Protection

*BK0604031194 Bangkok THE NATION in English
6 Apr 94 p B1*

[By Manirat Chitsamankun]

[Text] Thai Embassy officials in Washington expect the United States to link its decision to extend tax concessions to Thailand to environmental protection issues when the Generalized System of Preferences (GSP) agreement is reviewed in September.

A report from the embassy's commercial counsellor indicates that environmental issues are among general social issues likely to be considered in the review of the GSP for Thailand.

Addressing environmental issues through trade restrictions, however, has been opposed by some conservation groups such as Friends of the Earth, Greenpeace and the National Wildlife Foundation [as published], which argue that it was difficult to apply such pressure on trade.

The United States, the report noted is also likely to grant concessions to an additional 40 developing countries, especially from Africa.

Washington will further consider lowering the GSP's per capita income ceiling condition for some countries, as it feels the current set level is too high.

Meanwhile, the report said, U.S. importers have lobbied for higher levels of imported goods under the GSP programme, especially for the three most active sectors—textiles, footwear and leather products.

But local producers of these products are strongly opposed to any increase, fearing an influx of cheap imports will hurt U.S. industries.

Washington has reduced import tariffs affecting U.S. \$19.5 trillion worth of goods under the GSP programme, cutting U.S. \$500 million from the normal level.

Meanwhile, the European Union (EU) recently informed the Thai Commerce Ministry that it will announce new conditions for Union GSP privileges by 15 June.

The EU is considering new tax concessions for its GSP programme that will take into account the level of economic development of exporting countries as well as the level of per capita income.

The Foreign Trade Department expects the EU might cut the volume of Thai exports in some categories under its GSP programme.

Last year, Thai exporters took full advantage of the GSP programme in many sectors, including textiles and apparel, yarn and processed pineapple.

The European Union's new conditions for its GSP programme are expected to be introduced next year.

VIETNAM

Forestry Professor on Conservation Concerns

*94WN0194A Helsinki HELSINGIN SANOMAT
in Finnish 19 Feb 94 p B 3*

[Article by Katri Himma: "Vietnam Is Conserving Its Forests; New Village Model May Reduce Slash and Burn of Mountain Forests"]

[Text] Hanoi—Vietnam is rapidly opening its doors to a market economy. But unlike Thailand and Indonesia, Vietnam does not want that country's exceptionally fragile natural environment to pay the price for it.

They want tight supervision of the rapidly dwindling forests. Logging permits are restricted and scientists have recently found promising new ways of halting the rapid advance of erosion.

The size of Norway, mountainous Vietnam is losing over 160,000 hectares a year of virgin forest.

While the forests are being threatened more and more with commercial logging, forest use by ordinary people is a basic problem, according to Vo Quyn, professor of forestry at Hanoi University.

Eighty percent of Vietnam's 70 million inhabitants still live in rural areas. Arable fields are in short supply. As the population grows, the slash-and-burn agriculture employed especially by the ethnic minorities that live in the mountain regions is becoming a problem.

Whereas after farming it for a few years, a cleared and burned field used to be left for at least 10 years to revert to forestland, now new farmers come to clear the land again within as little as 3-5 years because there is no other unoccupied land.

When forestland does not have time enough to properly reforest itself, erosion sets in. According to Prof. Quyn, 13 million of Vietnam's total of 32 million hectares are already devastated because of erosion.

Pond in Center of Ecological Village

Vo Quyn, who heads the Faculty of Natural Resources and Environmental Affairs at the University of Hanoi, is Vietnam's ecology veteran. After the Vietnam War, the country's forests were caught up in an ecological catastrophe. Seventy million liters of environmental toxins had been scattered over the land.

In the 1970's Prof. Vo Quyn set out in earnest to look for a village model that would get the aborigines, who were used to moving on [after exhausting a piece of land], to remain in their areas and work the forests and fields of the mountainous areas in an enduring manner.

After years of experiments and errors, Vo found the ideal village model. Fruit trees are planted near the house and fast-growing trees from which people get their firewood on the upper slopes.

Villagers can cultivate their own crops, tea, rice, and vegetables, between the forest stands. In the center of the village is the heart of the idea, a pond that produces water for both people and plants and guarantees fish for the villagers' tables.

"The only way to get people to protect the environment they live in is to make it useful to them. People need food and money," Vo said.

Vo's model is now being applied in many provinces. Nearly as much new forest is being planted in these areas as is being logged.

In January the Vietnam National Assembly passed the country's first package of environmental laws. It contains strict rules according to which business firms are obligated to assess the impact of their operations on the environment and their use of natural resources. Prof. Vo, who participated in the drafting of these laws, is particularly pleased.

"Now we have a foundation on which to base ourselves. While the new laws are not yet very detailed, they afford government officials the possibility of monitoring the use of natural resources better than they could before."

The laws are also of help in connection with Vietnam's latest environmental problem, the dumping of waste. At the start of the year, a Vietnamese food company asked customs officials for permission to import "a 61-container lot of miscellaneous assorted plastic products" into the country.

However, the shipment vanished and after only a few weeks the cargo was found in a suburban development near Ho Chi Minh: 1,114 tons of dirty, used plastic bags. They had planned to burn the plastic waste or bury it. The officials, however, ordered the shipment to be sent back to its country of origin—Germany.

Country Joins Convention on Endangered Fauna, Flora

BK2903113594 Hanoi Voice of Vietnam in English
1000 GMT 29 Mar 94

[Text] Vietnam has taken a decisive move to protect its varied fauna and flora by joining the Convention on International Trade in Endangered Species of Wild Fauna and Flora. The convention will cover Vietnam as of 20 April.

CROATIA

RSK Accuses Croatia of Dumping Nuclear Waste in West Slavonia

LD0604191494 Belgrade TANJUG in English
1754 GMT 6 Apr 94

[("Pool" item)]

[Text] Belgrade, April 6 (TANJUG)—Foreign Minister of the Republic of Serb Krajina (RSK) Slobodan Jarcevic said on Wednesday in a letter to UN Secretary-General Butrus Butrus-Ghali that Croatia was depositing nuclear and toxic waste in western Slavonia, close to the border with the RSK.

The radioactive and toxic waste is being dumped on two locations on Mt. Papuk, Jarcevic specified.

Croatia drove out all Serbs from western Slavonia in 1991 in its war of secession from the former Yugoslav Federation.

Jarcevic said he wrote a letter last month to UN expert William Fenwick informing him about the hazard the dumps posed to the environment. The copy of the letter was sent to the office of the UN secretary-general.

In the letter addressed to Butrus-Ghali on Wednesday, whose copy was sent to TANJUG, Jarcevic expresses regret and puzzlement at not receiving a reply from the UN secretary-general, "all the more so as the dumps pose danger not only to the people of the RSK but to UN troops deployed near the danger zone too."

The RSK was formed in 1991 in predominantly Serb-populated areas in Croatia in response to Croatia's violent secession from the former Yugoslav Federation and attempts to downgrade the Serbs to a national minority.

The RSK was placed under UN protection in March 1992 and 14,000 UN peacekeepers are currently stationed there.

In his letter to the secretary-general, Jarcevic enclosed the topographical map of the two locations and roads leading to them, and insisted that the UN civilian police investigate the matter and report the findings to the Security Council.

HUNGARY

Official Discusses State of Environmental Protection

AU0604203494 Budapest PESTI HIRLAP
in Hungarian 6 Apr 94 p 9

[Interview with Sandor Papp, deputy chairman of Parliament's Environmental Protection Committee, by Janos K. Braz; place and date not given: "Sandor Papp Views the State of Our Environmental Protection"]

[Text]

Braz: Hungary is the waste pipe in the Carpathian basin: Pollution and oil spills from the rivers of neighboring countries are flowing into Hungary, while the wind is

carrying in acid rain. We asked Sandor Papp, deputy chairman of Parliament's Environmental Protection Committee, to comment on the consequences of all this on the state of Hungary's environment.

Papp: From the state's viewpoint, the most important issue is that more than 90 percent of surface waters and rivers flow into Hungary from neighboring countries. Therefore, we can also say that we are exposed to pollution originating from neighboring countries. This draws attention to a very important fact—that the Carpathian basin is ecologically a uniform region. Therefore, we can only protect the environment if we develop adequate relations with neighboring countries to prevent damages.

Braz: What are these relations like at the moment? Are they insufficient, sufficient, or do they need improvement?

Papp: These relations cannot be described in one word. For example, our relations with Austria are good. We have certain problems with Slovakia, Ukraine, and Romania. For example, oil spills often flow into the Koros River from Romania, and we cannot pinpoint the origin of these spills. Another frequent case is when Hungarian experts try, and fail, to contact Romanian experts and, in such cases, irrespective of the size of the pollution, the issue automatically turns into a political issue because it is impossible to treat the subject differently.

Braz: How does the environmental state of individual countries affect Hungary's current economic and market restructuring? How does the appearance of foreign capital affect environmental protection?

Papp: An environmental debt and damage has accumulated in Hungary in the past two or three decades, and the size of this debt is approximately equivalent to Hungary's foreign debt—namely \$20-22 billion. This amount derives from the following calculation: Economic activity causes an environmental burden equivalent to 4-6 percent of the gross national product [GNP] annually, and we use 1 percent of the GNP for cleaning up the damage. It is obvious that one cannot eliminate this environmental damage overnight, even with the best law. We need a proper environmental law, but this is not a sufficient condition for mending our environment. This issue obviously affects the flow of foreign capital. However, foreign investors are primarily disturbed by the uncertain, unregulated, and unpredictable economic situation rather than by the well-defined tasks and environmental protection regulations. We know that the auditing of environmental tasks is also carried out in the process of privatization. Thus, it is possible to deduct the sums allocated to the elimination of environmental damages from the purchasing prices. One of the most negative examples is the Lehel Refrigeration company of Jaszbereny where the new owners discovered environmental damages on the premises after the purchase, and the elimination of these damages would have cost the equivalent of the factory's entire purchasing price. I would like to stress that foreign enterprises are most worried about the unregulated and unforeseeable economic situation rather than about the state of the environment.

REGIONAL AFFAIRS

Southern Cone Environmental Issues

PY3103213894

[Editorial Report] The following is a compilation of reports on environmental issues monitored through 31 March.

BOLIVIA

The Caballero Province Environmental Association, Acecab, is planning to plant 25,000 native trees to stop erosion in the Comarapa Valley. Acecab President Benedicto Vargas said the 35 hectares of the Upper Comarapa River must be quickly reforested in the face of the excessive soil loss as a result of indiscriminate logging and natural erosion. (Santa Cruz EL MUNDO in Spanish 2 Mar 94 p 14)

BRAZIL

The Foreign Ministry will submit a request to the U.S. Government for a 30-day extension on the deadline established for Brazil to adopt an official position on the inclusion of mogno—a Brazilian tree—in Annex 2 of the Convention on the International Commerce of Endangered Wildlife and Flora Species.

A decision on mogno is on the agenda of the next meeting of the international tropical lumber organization council, of which Brazil is a member. (Brasilia Voz do Brasil in Portuguese 2200 GMT 11 Mar 94)

Brazilian Institute for the Environment and Renewable Natural Resources, Ibama, workers found 30,000 cubic meters—15,000 trees cut down illegally—floating on the Purus River. The Ibama officials discovered that most of the trees had been taken from the Aripuana Indian reserve. A fine of 250 million real cruzeiros was imposed on the timber entrepreneurs, whose tugboats will be confiscated. Charges will be pressed against them with penalties as long as eight years in prison. (Rio de Janeiro REDE GLOBO Television in Portuguese 2300 GMT 21 Mar 94)

Ibama declared the Novo Destino rubber tree forest in Canutama County, Amazonas State, a private natural wealth reservation. The forest covers 104,000 hectares and is 20 times larger than the Caraguata forest reserve in Antonio Carlos County, Santa Catarina State. (Brasilia Voz do Brasil Network in Portuguese 2200 GMT 25 Mar 94)

PARAGUAY

Engineer Edgar Benitez and chemist Adelida Maldonado, two Agriculture and Livestock Ministry officials, carried out a surprise tour of the Chaco region, including Paratodo, Lolita, Loma Plata, and Filadelfia. In Loma Plata and Filadelfia, the officials seized 35 boxes of

"Guayaki," a poison against ants, worth 1.5 million guaranies. "Guayaki" contains 5 percent aldrin, a highly poisonous agrochemical. (Asuncion ABC COLOR in Spanish 28 Mar 94 p 36)

URUGUAY

According to a survey by the Economic Commission for Latin America, temperature increases in South America in December, January, and February might range from 2 degrees centigrade in the Amazon to 8 degrees centigrade in the Southern Cone. A 4-degree increase might affect most regions with a high agricultural production rate, including Argentina, Brazil, Chile, Uruguay, and Paraguay. (Montevideo EL PAIS in Spanish 21 Mar 94 p 10)

ARGENTINA

Atomic Energy Commission To Build Sewage Irradiation Plant

PY0604011594 San Miguel de Tucuman LA GACETA in Spanish 20 Mar 94 p 16

[Text] DIPOS [expansion unknown] trustee Benjamin Garcia Posse has signed an agreement with the National Commission for Atomic Energy (CNEA) for the construction of a Sewage Waste Irradiation Plant (PIBA) [Planta de Irradiacion de Barros Cloacales]. The project will seek to solve the city's waste recycling problem, guaranteeing its rational, safe, economic, and harmless return to the environment.

CNEA will provide the funds, engineering, direction, construction, and installation for the plants, as well as the radioactive material (Cobalt 60) and the training of the personnel who will operate the plant. The plant's construction will be made to coincide with the construction of the Sewage Disposal Plant in San Felipe.

The contract was signed by Roberto Oscar Marques, CNEA radioisotopes and radiation area manager, on behalf of the atomic agency. Engineer Jorge Guillermo Grano also attended. During the ceremony at DIPOS, CNEA experts and officials exchanged ideas on the project.

The contract establishes that CNEA will intervene and supervise the installation's security as well as any operation involving the movement of radioactive materials inside and outside of the plant.

Operation periods will not exceed 10 years. In the 11th year the ownership of PIBA will be transferred to DIPOS.

The treatment consists of forcing the "sludge" around a cobalt-60 radioactive source carrier installed in an irradiator, which is a bunker built eight meters underground with concrete walls 1.4 meters thick acting as armor against radiation.

Once the sludge is pasteurized it will go into a tank for bacteriological and radiation control. Here routine controls will check whether the sludge is harmless.

NICARAGUA

EEC Assists Project To Study Spread of Farmlands

94WN0220A Managua *LA PRENSA* in Spanish
1 Mar 94 p 13

[Article by Josefa Gomez Navarro]

[Text] The European Economic Community (EEC) and the British Government will support the Ministry of the Environment and Natural Resources (MARENA) in a series of major projects to control and take pressure off the advancing agricultural frontier in our country.

Through CADDESCA, the Central American Program for the Stabilization of the Agricultural Frontier, the EEC will support the ministry by promoting a development project that will ease the pressure on the agricultural frontier in the Bosawas area.

To this end, MARENA officials submitted a proposal for the Bosawas region in which they identified the areas to be

monitored. They are the basin of the Bocay River, including mestizo communities, the development area in what used to be Resistencia de Ayapal, and the Sumo communities in this 800-square kilometer zone.

The project will help support the communities in awarding land titles.

The British Government will be supporting MARENA by using satellite photography to determine the advance of the agricultural frontier.

Although an agreement has not yet been signed with the British Government, the head of MARENA, Dr. Jaime Incer, indicated that Nicaragua may have access to the service this year.

The issue arose during a visit by the British ambassador, who was impressed by the amount of information handled by MARENA's forest inventory center, Incer said.

The project will furnish regular satellite photographs of Nicaragua, showing where forests have been burned, where trees are being planted, etc.

INDIA

Trade in Ozone Depleting Substances Banned

94WN0217A Madras *THE HINDU* in English 9 Feb 94
p 1

[Text] New Delhi, Feb 8—Being a party to the Montreal Protocol, to check emission of substances which deplete the ozone layer, the Union Government has prohibited import and export of eight substances with countries which are not parties to the protocol.

The eight substances are trichloro flouro methane, dichloro difluoro methane, trichloro trifluoro methane, dichloro tetrafluoro ethane, chloro pentafluoro ethane, bromo chloro difluoro methane, bromo trifluoro methane and dibromo tetrafluoro ethane. Trade in these commodities with countries which are parties to the Montreal protocol is permitted without a licence.

RUSSIA

Committee To Study Ecological Impact of Amur Space Center

LD2903123294 Moscow *INTERFAX* in English
1030 GMT 29 Mar 94

[Text] The public committee created in Blagoveshchensk (administrative center in the Amur Region) will study the ecological problems associated with the building of a new space center in the town of Svobodny. The committee includes scientists, doctors, public figures representing different parties and state structures.

Members of the committee believe that during the construction period the public should be given all information about the possible influence of the Center on the unique wildlife of the Amur-Zeya Valley and the influence of rocket launching on the environment. The demand was greeted with understanding by the regional administration. In Blagoveshchensk and Svobodny the first information meetings were held between the public and workers of the federal space agency.

Primorye Territory Warns Radioactive Waste May Be Dumped

LD2903124894 Moscow *INTERFAX* in English
1030 GMT 29 Mar 94

[Text] If the Primorye territorial administration decides to dump radioactive wastes into the Pacific, it will grossly violate the law on nature conservation, head of the State Atomic Inspection Committee's department for the radioactive security of defense facilities, Nikolay Shapovalenko, told Interfax.

A representative of the Primorye administration announced last Thursday that liquid radioactive waste might be dumped into the sea, given the critical condition of the TNT-5 and TNT-27 storage ships.

To quote Shapovalenko, a mobile rectification system with a handling capacity of 0.5 cubic meters per hour is to be built in the Far East.

After such a system is put into operation, a stationary facility with a handling capacity of 2.5 cubic meters per hour will be built. Besides that, an enterprise manufacturing sorbents is to be built in the Far East.

Shapovalenko also said that 114 billion rubles will have to be spent on solving the problem of liquid radioactive wastes in the Primorye Territory. However, the government has not allocated anything to it so far.

The know-how which has been proposed by Japan and which the local administration would like to have consumes almost 100 times more energy and will require an investment of about \$50 million, said Shapovalenko.

The Maritime Territory is experiencing a dire shortage of energy. Meanwhile, if the Japanese project is accepted, a thermal electric power plant costing nearly as much as the entire rectification facility, will have to be built.

Moreover, Russia will be entirely dependent on the Japanese suppliers.

According to the State Atomic Inspection Committee, the condition of the TNT-5 ship, built back in 1960, is particularly serious. This tanker was to be written off in 1992, but to this day it stores 400 cubic meters of low-level liquid radioactive wastes. "It may sink any moment right at the moorage," said Shapovalov.

Radioactive Contamination Sites Reported in Moscow

LD3003133494 Moscow *INTERFAX* in English
1312 GMT 30 Mar 94

[Text] Some of Moscow's industrial enterprises dealing with radioactive materials do not pass all of the radioactive waste to the Radon processing amalgamation. As a result, there are about 70 places contaminated with radioactive substances on the premises of Moscow's enterprises and even in the vicinity of apartment blocks, the Moscow Environmental Protection Committee told Interfax. Almost all of them have been eliminated by now, except 18 storages of low-radioactive waste in Krylatskoye, Lyublino, Strogino and some other districts.

The Moscow Environmental Protection Committee believes that as such these sites pose no threat to the population. But before building housing on them decontamination measures must be taken. The decontamination of one of such site, 26 kilometers from Moscow, is being completed.

The same source reports that there are more than 1,500 enterprises and organizations in Moscow which use nuclear reactors, radioactive materials and products.

The worst danger is coming from 769 enterprises which create radioactive waste. In 1993, radiation control inspectors revealed 288 instances of violation of safety rules.

The Moscow Environmental Protection Committee announced that on the whole, Moscow's radiation level is light and measures 7 to 14 microroentgen per hour.

Natural Source Radiation Seen as 'Invisible Chernobyl'

94WN0223A Moscow *SEGODNYA* in Russian
10 Mar 94 p 9

[Article by Aleksandr Vasilyev under the heading "Aspects": "An Invisible Chernobyl—Created by Nature Itself"]

[Text] Everyone is arguing about "radiation." But the manmade danger is just one part of the problem. People talk and write much less frequently, more quietly and less clearly about the other part—the fact that natural sources of ionizing radiation account for approximately 70 percent of the total radiation to which people are exposed.

That comparisons between Chernobyl and the radioactive effects of natural radiation sources are not exaggerated is demonstrated by the fact that the collective radiation to which Russia's population is exposed from natural sources is 300 times greater than radiation exposure resulting from

the Chernobyl accident. The greatest "contribution" is made by radon and products of its decay found in the air inside buildings. According to a preliminary estimate, approximately 1.5 million Russians are exposed to 0.6-1.2 rems per year. That means that the bulk of expected medical effects from radiation among the public does in fact stem from natural sources. The annual death rate from this factor may be as high as 25,000.

There is no way that this issue can be viewed either as unexpected or as a recent discovery. In 1970, almost a quarter of a century ago, a major series of studies was completed on the presence of naturally-occurring radionuclides in building materials, resulting in the establishment of appropriate construction standards. True, studies of the radiation level at non-uranium mines and in miners' settlements were conducted irregularly and unsystematically. It was during this period that Kazakhstan discovered a unique miners' settlement—a "radon city"—where 90 percent of the housing showed dangerous levels of radon. Out of a total of 150 non-uranium mines, more than 100 had dangerous radon levels, and radiation exposure at those enterprises sometimes exceeded levels permissible for uranium mines. It was also discovered that employees of enterprises that refine minerals are also exposed to radiation from natural sources. The radiation level in oil- and gas-producing areas was also far above normal. For example, in Stavropol Kray a study of a drilling pipe warehouse indicated a radiation level there of up to 200 microroentgens per hour. The culprit was accumulation of radium salts inside the pipe.

In short, experts have long understood the significance of this problem. Particularly since they had before them examples of successful solutions to the problem in the West, where jobs of this nature have been performed in compliance with national and governmental programs since the mid-1970's. For example, in 1984 the United States allocated \$13 million from the federal budget and \$600 million from state budgets for research in this area.

Our program, which has been repeatedly discussed at every level since 1987, both by the government and by parliament, was clearly born under an unlucky star. Nothing seemed to help, neither the five government directives signed by vice-prime ministers nor support from the Supreme Ecological Council. But the height of misfortune came with the two attempts to bring the program up for discussion, first in the USSR Supreme Soviet and then in the Russian Federation Supreme Soviet. The first attempt was made in late August 1991, the second in October 1993. One would have to believe that the Radon Program is truly jinxed.

It was only recently that a session of the government's commission on the environment and natural resource use approved the program, which will soon be submitted to the government for confirmation. Bearing the past in mind, one should not jump to any conclusions and predict a rosy future for the program. But neither should it be said that it would be all that difficult to implement. In any event, its cost—R4.0 billion [rubles] in 1992 prices—is two orders of magnitude lower than the error made in calculating the Russian State Budget.

The first part of the Radon Program envisions selective radon safety studies of radiation levels in various regions of Russia and identification of high-risk groups. The problem is that radon levels in buildings are not constant. Therefore long-term measurements must be taken in each building. It would take thousands of years to study all the housing in Russia. Detailed and comprehensive studies are planned only for regions where radon presents a threat. According to preliminary estimates, 40 percent of populated areas could have dangerously high radon levels.

A radiation-based, geological and chemical classification of Russia's territory by degree of potential hazard from naturally-occurring radionuclides will make it possible to identify areas with varying degrees of hazard and choose priority areas for accelerated environmental radiation studies. The program's designers envision that by 1995 Russia will have a map showing regions of increased radon hazard and will have developed the formulas and technologies for the manufacture and use of insulating building materials as well as a system of radiation monitoring for use during construction, will have taken steps to reduce radionuclide emissions by coal-burning heat-and-electric-power stations and reduce irradiation of mine workers, and will have obtained data on lung cancer rates among the populations of areas with increased radon hazard levels (according to UN data approximately 20 percent of all lung cancer is caused by the effects of radon and products of its decay).

This is precisely what places like Vyborg, Krasnokamsk and Pyatigorsk need to end this quiet, invisible but equally terrible natural Chernobyl.

Steps Outlined for Dealing With Russia's Pesticide Problems

94WN0223B Moscow *SEGODNYA* in Russian
10 Mar 94 p 9

[Article by Fedor Orlov: "Leading the Whole Planet—Tens of Thousands of Pesticides: Lots, Even for a Big Country"]

[Text] God willing, soon there will be yet another program to alleviate the effects of our ill-conceived efforts to wrest from nature more than it can or will give. In this case the time factor is particularly important, because at issue are pesticides, for which the season of massive use is fast approaching. When using the word "massive" one should not only bear in mind the tonnage involved but also the array of this type of agricultural chemical that exists—the list of permitted pesticides contains over 500 names, but in reality, counting all the possible combinations, the number is in the tens of thousands. This wide choice, like its legalized status, definitely does not please either ecologists or farmers. Evidence of this were the heated discussions that occurred at two board meetings of the Ministry of Environmental Protection and Natural Resources, even though the professionals gathered there are usually pretty much unfazed by (as the "green" press likes to phrase it) the latest evidence of ecocide.

One thing remains quite clear: a negative situation with regard to this super-toxin can be found in a majority of Russia's regions. However, it is difficult to say anything specific about each oblast—of the 206 functioning analysis offices only 24 are capable of monitoring pesticides in the soil, and only 30 can monitor pesticides in water.

A Russian State Committee for Hydrometeorology soil study done in 17 krays and oblasts found that soils were most polluted in forests (37-52 percent of area) and in cropland used to grow vegetables (18 percent) and grains (11 percent). The most pesticides are applied in Krasnodar and Stavropol krays and in Voronezh, Kursk, Ryazan, Moscow and Nizhegorod oblasts. In terms of environmental effects the situation is worst in the Northern Caucasus, Rostov Oblast, the upper and middle Volga regions, Maritime Kray, the area around Moscow and Chelyabinsk and Kurgan oblasts.

It is not only soils that are polluted: according to data from regional environmental protection agencies, in 1992 alone there were 994 cases in which bodies of water were poisoned. As a result, the Russian Federation Committee on Fishing recorded massive fish kills in the watersheds of the Volga River and the Sea of Azov. Pesticide runoff from adjacent fields into the Mechetka River (Rostov Oblast) killed as many as two million pike, carp, knottyhead and perch. A total of 84,000 fish died in the Anna River, which flows into Cheboksary Reservoir, as a result of hops cultivation along the river's banks.

Insects are of course harmed by pesticides, but not just the harmful ones. For example, in Bryansk and Ryazan oblasts there have been instances of large number of bees being killed, resulting in a sharp drop in the yield of crops pollinated by them.

The reason for the deadly effects of agricultural chemicals is not only their excessive use, but also a lack of modern equipment and insufficient knowledge about equipment servicing and chemical storage. According to available statistics, 52 percent of storage facilities do not meet environmental protection requirements. In a majority of cases that classification means that chemicals are stored virtually out in the open.

As for equipment service, as a rule little time is wasted on that—equipment is sent directly out to the fields, loaded there and washed out there without ever being properly decontaminated.

In addition to all this, the Ministry of Agriculture finds itself the owner of 100,000 tonnes of unusable pesticides. No one knows how to destroy them safely, and the problem is a heavy burden on the Waste Program.

The whole grim list of Russia's pesticide users should immediately suggest some obvious conclusions: firstly, creation of an adequate map of pesticide usage distribution, particularly since the most likely sites can already be predicted. Secondly, establishment of an effective system for monitoring the storage and efficient use of pesticides. Thirdly, provision of an effective legislative foundation

that will require violators to take responsibility for eliminating damages caused by them, if only by paying for recovery efforts. And, finally, a fundamental answer to the question of why we need such a vast array of pesticides, a number out of proportion even to the rich palette of our immense country's natural conditions. But accomplishing all this will be a truly monumental task.

Scientists, Greens Urged To Cooperate on Volga Basin Problems

94WN0225A Moscow ROSSIYSKIYE VESTI
in Russian 11 Mar 94 p 4

[Article by Andrey Illarionov: "The Sturgeon Were the First To Die"]

[Text] Can an "environmentally uneducated" individual foresee something that science cannot or will not predict?

I recall how alarmed natives of the Volga region became when construction began on the huge Volga hydroelectric power stations. And even though one heated conversation about it was enough for one to wind up with the other convicts building the "great Stalinist construction projects," the prophets would not be quiet.

"How will we live without the floodplain? It feeds us," said one.

"How will the Astrakhan herring reach their spawning grounds through a dam?" asked another in despair.

"Ah, the fish will go around the dams on fish ladders," I recall my father retorting, mimicking a lecturer from the State Committee for Hydraulic Projects.

These fighters for truth, willing to be crucified for the Volga, were not just fed by the great river. As native-born Volgans they could not imagine life without it. And the way they lived their lives included a certain degree of spontaneous environmental consciousness.

Their worst fears have been confirmed. The changes began with the most valuable fish species of all: the sterlet and the sturgeon for which that stretch of the river was famed did not like the stagnant water of the Volga "seas." Also gone were the lampreys, which we were sure were the finest delicacy in the world. Then the less-finicky bream, pike perch and catfish became rarities. Then, like visions from a nightmare, tiny bullheads with misshapen heads and half a body began to appear.

But even worse than those visions was the kilometers-long strip of rotting, stinking fish that lined the riverbank. Yet that was not the end of the grim effects of the Volga's version of natural dialectics. V. Osipov, director of Khvalynsk Forestry Kolkhoz and a person very familiar with the area, has often shown me places where the pines are turning a sickly yellow and the aspens lose their leaves in the middle of the summer where oaks in their prime are drying up. And there has been no significant honey harvest from the linden trees for a decade now.

This damage is not limited to the Saratov Reservoir and its surrounding area. The greater portion of the Volga region

is suffering. A fellow villager of mine, now deputy chief of the rayon administration, asks: "Who is going to pay for these damages? Who will save the Volga, and how?" To find an answer to those questions I took a trip to the city of Tolyatti, where I visited the Russian Academy of Sciences Institute of Volga Watershed Ecology.

The institute has been in existence for 10 years, and it has research vessels that ply the expanses of the Volga "seas," stations on picturesque shores and laboratories in Tolyatti and several other cities. In recent years it has published several very useful monographs on the logic of development of human works—the reservoirs—and a portion of the great river's natural environment. And, remarkably in these times, against a backdrop of general impoverishment in the sciences the institute is holding a steadier course than some more famous academic institutions.

What did I hear there? Regarding the death of fish in the Volga I got a complete answer: this is due to the reckless pollution of the river, a slowdown in the reservoirs' self-cleansing capacity and a deadly "bloom" of blue-green algae. Our discussion of problems in the Khvalynsk Forest was limited to broad conjectures, as those I spoke with, the institute's directors, did not indicate any familiarity with the forest or any particular interest in its fate. Yet the Khvalynsk upland forest is an ecologists' treasure—a surviving island of ancient forest that spread hundreds of kilometers south of the usual forest boundary 500 years ago or more. It comes to the Volga's environmental crisis with a tremendous amount of survival "experience." The presence there of pines that have miraculously survived from the Cretaceous Period—the ancestors of today's pines—should alone be enough to excite keen scientific interest. But it has not...

Of course, the institute, which is modest in size and fairly limited in its scientific scope, is not yet capable of monitoring and providing ongoing assessment of environmental changes in a region with an area of 1.3 million square kilometers. But I believe the institute's problem is that as a scientific institution it has been too slow in undertaking the expected large-scale research. "It is cause for bitter regret that in all these years the institute," self-critically acknowledged Gennadiy Rozenberg, its director and a doctor of biological sciences, "has not acquired an ichthyological environmental laboratory, without which we are unable to study all the problems of Volga fish or develop all possible measures to help them survive."

Almost half of the Volga watershed is covered with forest, and everyone knows that the Volga and its tributaries flow out of forests. And if the forests retreat, the Volga will also retreat, and desert will replace it. That means the institution should have a forest ecology laboratory. But right now that does not seem to be the accepted wisdom.

So how can the Volga be saved? If by some miracle the 100,000 sources of toxic discharges into it were shut off, even that would not save the great river. The underlying problem—the gigantic dams—would still be there, and the livelihood of the Volga's people has long since become closely linked to them.

"If only we could regulate the Volga's flow so that it would facilitate self-cleansing and protect the fishing industry's interests," was one fine idea put forward by the institute's director. And even though river flow is dictated by the very pressing need to generate as much electric power as possible, why is the institute not attempting to model the process, or at least its most general parameters? Just to know what the first step toward saving the river will cost.

As for the individual but on the whole equally important issues pertaining to the survival of nature on land in the Volga watershed, they depend to a greater extent on local efforts. And, thank God, there are people of action among those who live along the Volga. V. Osipov, who holds the title "distinguished forester of Russia," has been planting Siberian larch in the Khvalynsk Forest for many years. There, far from its home, it is adapting splendidly, growing quickly and avoiding the diseases that are typical of it in Siberia. Thus it has been possible to compensate in part for the loss of other valuable species unable to stand the environmental strain.

A positive environmental initiative, is it not? However, at the institute in Tolyatti a laboratory head offhandedly and decisively expressed his opposition to the idea, asking how the larch-produced bactericides, fungicides and protozoacides might affect their environment. I dared object to that scientist that since for two decades now the plantings have produced only positive results, it might be possible to visit the area, study it carefully and then support and recommend expansion of the experiment... But this local scientist was not interested in the larch growing nearby on the banks of the Volga. So I turned to academician Aleksandr Isayev, director of the International Forest Institute in Moscow. He termed the Khvalynsk Forestry Kolkhoz's experiment not only interesting, but very promising. That is because the larch, which is very resistant to chemical pollution, also tolerates other trees, shrubs and grasses in its vicinity...

I am not debating a specific point—this is a matter of attitude. The institute condemns the "excessive enthusiasm of some neophytes to improve the state of the environment though they lack professionalism..." End of discussion. In this connection academician Vlail Kaznachayev recently said to me: people out in the field, with their great wealth of experience when it comes to the survival of the environment, seldom win arguments with scientists...

At the institute attempts to establish regional programs to save the Volga are sarcastically termed "the landslide process." That assessment probably does contain an element of truth, but the whole problem is that while scientists are making fun of efforts to save the Volga and developing a theory—discovering the mechanism by which ecological laws operate—the degradation process is gathering speed and becoming, to use a currently fashionable word, irreversible.

Should it come as any surprise that the local Green movement is very suspicious of the aforementioned institute? And there are a great many environmentally unschooled people along the Volga who have no idea that the Institute for Volga Watershed Ecology even exists... Oh, if only all

these as yet isolated forces could come together! If science and folk wisdom could join hands... Wishes are not enough to bring about such an environmental alliance of the Volga people's efforts—what is needed is massive, systematic coordination of research and practical efforts by academic and ministerial institutes, environmental monitoring and protection agencies, enterprises in industry, agriculture and forestry and public movements.

Who can coordinate efforts to save the Volga? The Institute for Volga Watershed Ecology, or perhaps some other governmental institution? It is easier to ask than it is to answer... The responsibility is just too great.

'Conversion-Ecology' Program To Develop Ecological Products, Technologies
94WN0225B Moscow ROSSIYSKIYE VESTI in Russian 17 Mar 94 p 11

[Unattributed article: "Billions for Ecology"]

[Text] Russia has developed a program called "Conversion-Ecology." The urgent need for such a program stems from the worsening environmental situation coupled with the virtual absence of an independent sector in this country oriented toward the development and manufacture of environmental products, as well as the fact that the task is truly complex. Using the intellectual and scientific-technical potential and production capacity of the defense complex to solve environmental safety problems by providing comprehensive environmental monitoring, creating new environmentally safe technologies and improving means of processing industrial and household wastes will help make that task manageable.

The program envisions involvement by more than 90 research and planning organizations under the Russian Federation Committee on the Defense Industry.

According to 1993, estimates, the cost of the program will be R54.28 billion [rubles].

Funding will come from the republic budget, investment and conversion credits, capital investment, foreign investment, customers' own funds and other off-budget allocations.

Implementation of the program is expected to take three years.

The program will include the development and production of new technologies and means of cleaning up exhaust gases and waste water and of processing, neutralizing and reusing solid waste; measurement and information systems for background monitoring of the state of the environment, and systems to monitor pollution sources; and environmentally safe and resource- and energy-conserving technologies and types of production.

The "Conversion-Ecology" program will be coordinated by the Russian Federation Ministry of Environmental Protection and Natural Resources.

Liquid Radioactive Waste Dumping Set for May
MK0104092094 Moscow NEZAVISIMAYA GAZETA in Russian 1 Apr 94 p 2

[Unattributed report]

[Text] Petropavlovsk-Kamchatskiy—The Maritime Kray interdepartmental commission to monitor the observance of radiation safety norms has deemed it expedient to dump liquid radioactive waste from the TNT-5 tanker in designated areas in the Sea of Japan in May. The commission checked the condition of the two tankers where liquid radioactive waste from the Pacific Fleet is stored and established a worsening in the radiological situation at the place of their anchorage in the Bolshoy Kamen Bay. The commission is especially concerned by the TNT-5 tanker, which is in critical condition after a repeat winter storage of liquid radioactive waste aboard it. The integrity of the tanker's drainage, pipe, and valve systems has been disrupted.

Danilov-Danilyan's New Book Views Russia's Place in Global Environment

94WN0231A Moscow SEGODNYA in Russian 17 Mar 94 p 9

[Review by Dmitriy Frolov of the book by Viktor Danilov-Danilyan, Viktor Gorshkov, Yuriy Arskiy, and Kim Losev, "The Environment Between the Past and Future: The World and Russia"; "Complexes Helped No One. The Ecological Situation in Russia: Another Perspective"]

[Text] On Tuesday, 15 March, at the Russian-American press center there was a presentation of the book by Viktor Danilov-Danilyan, Viktor Gorshkov, Yuriy Arskiy, and Kim Losev, "The Environment Between the Past and Future: The World and Russia." In the words of the chief of the press service of the Ministry of Environmental Protection and Natural Resources, Aleksandr Shuvalov, the book marks a kind of stage in the understanding of ecological problems. One must assume that such a strong expression was used by no means because the current leader of the Ministry of Environmental Protection and Natural Resources was among the authors—a fact that is important in and of itself, since it means that we have before us more than simply the opinion of a group of researchers. The book really does make a great impression, and this is certainly not achieved because it contains another round of apocalyptic predictions. Rather, on the contrary, attention is drawn to the absence of alarmism and, which is always curious, an attempt to reinterpret the current stereotypical ideas.

The most persistent of them is the certainty that ecologically Russia is almost the worst place in the world. Upon checking, it turns out that this is not altogether true and in the majority of cases not even true at all.

For example, indicators of degradation of the land in Russia, which has 8 percent of the land in the world, are

close to average. The same thing can be said about degradation of forestry systems. And Russia has almost 45 percent of the nontropical forests and 27 percent of the world's supply of wood.

The total discharges of atmospheric pollutants amount to 6-12 percent of the average world level. Our contribution to the production of chlorofluorocarbons which destroy the ozone layer was about 10 percent. In the meantime, the United States, Western Europe, and Japan together produce 73 percent of them. Moreover, Russia has preserved the largest area of land undisturbed by economic activity—scientists think that it could play approximately the same role as the entire Brazilian part of the Amazon region in stabilizing the environment.

Paradoxical as it may sound now, all the credit for the fact that we have managed to preserve Russian nature to one degree or another belongs to the centralized controlled economy, which is usually reproached for chronic neglect of the environment. There is no contradiction here in the strict sense of the word, since nobody has yet managed to abolish that notorious unity and struggle of opposites. Economic ineffectiveness and the sluggishness of the centralized system plus the difficulty of access and the harsh climate of the expanses of the northern part of Siberia and the Far East have forced us to concentrate our attention on already assimilated territories and make significant capital investments in so-called national regions. As a result, the ecosystems of the latter have been practically completely deformed. As for the industrial revolution on the "old land," the fact that 70 percent of the gross national product belongs to the defense complex is not the only result of this. In terms of the indicator of expenditure of resources and the quantity of pollutants per unit of gross national product, Russia has outstripped all developed countries. According to various estimates, losses because of damage to the environment in the former Union amounted to from 15 to 20 percent of the GNP annually. To this one should add the "deferred" damage, which has been caused, is being caused, and will be caused by wastes, mainly radioactive ones, that have been discharged in mass quantities into the environment because of the use of technologies that are imperfect but cheap and therefore attractive for the moment.

Researchers single out three stages in the offensive against the environment: virgin land, the age of the Ministry of Water Management, which caused the Aral crisis, and large-scale activity for prospecting and extracting oil and gas in the northern part of Western Siberia. The first and last dealt a blow to Russia itself, and, while the consequences of plowing over the virgin land are known, one can only guess at the damage to the ecosystems of the North.

In the meantime, the authors warn that a market economy, being a more effective mechanism than a centralized one, in principle is capable of causing more harm to the environment as well. Even now, both private and investment capital are being used for further development of resources and assimilation of new territories, whether it be in the petroleum and gas fields of the Barents Sea, on the Sakhalin Shelf, in Khanti-Mansia and Yamalia, or the felling of forests from Europe to the Far East.

Of course, in such cases one comes to expect formulas, and the authors try to satisfy this expectation. This might be a purely subjective impression, but, unfortunately, the satisfaction is not forthcoming. The declaration of the need to take others' mistakes into account (they have in mind the syndrome of plundering nature, which practically all developed countries have experienced in the past) and the appeal to the country's leaders to invest capital in science-intensive energy- and resource-saving technologies—all these are nothing more than good wishes. And references to the scenario for the development of Japan and Germany in recent years and even the "small dragons" of Southeast Asia are not very convincing. Perhaps the social pessimism that has become a complex is to blame for this.

It seems that the authors of the book invested their emotions (to the degree to which they can exist at all in a scientific study) in destroying this complex. In terms of impact on the environment, we descendants of a centrally controlled system are in no way worse (but not better, either) than societies developing according to the market scenario. Now, while cleaning up their local territories, they are "consuming" or prepared to "consume" the environment of the countries where it still remains. In essence this is a policy of "sweeping the dirt under the rug." The mechanism for competition was not conceived by man but was used by the biota and served as a stabilizing factor for it. From all appearances, the biota has mechanisms adequate to crowd out species that threaten its existence. Mankind has a chance to test this—the life span of a species averages 10 million years, but *Homo sapiens*, having prepared everything for its own destruction, has existed for only several tens of thousands of years.

As for Russians, they can only think globally and act locally, and even now try both to acquire capitalism and to protect the environment. Minister of the Environment Viktor Danilov-Danilyan will share his opinion on how to do this in practice in one of the next issues of *SEGODNYA*.

Proposed Japanese Nuclear Waste Processing Complex for Maritime Kray Criticized
94WN0226A Moscow *IZVESTIYA* in Russian
15 Mar 94 p 4

[Article by journalist Natalya Ostrovskaya: "Temptation by the Dollar: Why the Administration of Maritime Kray Is Turning Its Back on an Effective Domestic Project for Purification of Radioactive Waste"]

[Text] The scientific-research vessel *Okean* of the Far Eastern Institute of Hydrometeorology has left Vladivostok for Niigata (Japan) and subsequently the South Korean port of Tomhe.

IZVESTIYA reported on this joint Russian-Japanese-South Korean expedition to study radioactive contamination of certain regions in the Sea of Japan as long as two months ago. However, the date of putting out to sea was repeatedly postponed. Finally, everything was decided and coordinated. Most importantly, there is money, \$540,000 from Japan, which is alarmed over its ecological security.

Chemical specialists of the Pacific Fleet and scientists from the institutes of the Academy of Sciences in Vladivostok shrug their shoulders in bewilderment when it comes to this official alarm. The total radioactivity of last year's dumping of liquid radioactive waste (ZhRO) in the so-called region No. 9 of the Sea of Japan, which has gained scandalous notoriety throughout the world, was 0.37 curies—that is all! This is insignificantly little even according to relevant international norms.

Meanwhile, the actual, visible, and palpable problem abides in Vladivostok's backyard, in the city of Bolshoy Kamen, rather than on the free expanse of the sea. For half a year the Maritime area has had a delayed-radioactive action mine there, at the Zvezda defense plant, through the efforts of the Russian and Japanese Governments. These are two old special tankers of the navy, the TNT-5 and the TNT-27 with 2,000 cubic meters of "liquid radiation" on board. One of them has been decommissioned and moored for two years now. The second, moving with assistance from a tugboat, quietly transported liquid radioactive waste to the ill-fated region No. 9 before the ban.

As quite competent sources inform us, the decommissioned TNT-5 lost air-tightness as long as a year ago because of its rundown and unfit condition. However, this is not at all to say that radioactive wash from its tanks leaks right into the bay. Everything is exactly the other way around: According to the laws of physics, outside water seeps into the tanks of the ship. What is the danger of this? The spontaneous sinking of the old tub.

It is hard to say how many Japanese companies and corporations proposing their own projects for solving the problem of liquid radioactive waste have visited Vladivostok in recent months. They are undertaking to erect a complex for waste processing in Bolshoy Kamen with money from the Government of Japan. As the saying goes, with God's help, and the sooner the better, before the TNT-5 sinks to the bottom. However, what will the common Maritime area taxpayer say about this once he learns what the yearly operation of such a shore complex would cost?

According to calculations by scientists of the Far Eastern Division of the RAN [Russian Academy of Sciences], this will be quite an impressive sum. The complex is extremely energy-intensive; therefore, billions of rubles a year will be spent to pay for electricity alone. In addition, hundreds of thousands of dollars will be spent to purchase imported consumable materials which are not produced in our country.

Characteristically, this project, major in every respect, was discussed by the Maritime Kray Administration. At that time, a detailed memorandum signed by Doctor of Chemical Sciences Valentin Sergiyenko, deputy chairman of the RAN Far Eastern Division, was addressed to Governor Yevgeniy Nazdratenko. An alternative variant for solving this problem, which is without parallel in world practice, was proposed in the memorandum.

In this variant, the waste would be purified by using the so-called composite sorbent. It would be manufactured from

of local, Maritime Kray raw material—zeolite from Chuguyevskiy. Only a few scientists are aware of the secrets of sorbent "nitty-gritty"; they have kept this secret for a while since they do not have the funds to acquire a foreign patent which guarantees the protection of inventors' rights.

By all signs, the time has come. The scientists approached the technical administration of the fleet and received the famous liquid radioactive waste for laboratory testing; it is turbid dirty water which is rich not only in radiation but also in fuel oil and paraffin. Directing this water through the sorbent, they purified it to such a degree that the content of radioactive cesium, strontium, magnesium, and cobalt in it ended up several orders of magnitude below the maximum permissible concentration. In other words, the sorbent soaked up all the radiation; therefore, the processed water could be dumped right into the sea without any fear of an international scandal.

The scientists who were inspired by the initial results started to make calculations. It turned out that the total annual outlay associated with such technology for processing 7,000 cubic meters of liquid radioactive waste a year (the fleet just does not generate more than that), the operation of the installation, and so on would come, tentatively, to 350-400 million rubles [R]. This is much cheaper than the Japanese project.

This information was brought to the attention of the governor. However, no response to this appeal followed. In January, Sergiyenko wrote to the head of the kray administration for a second time, with the same result. Nonetheless, Yevgeniy Nazdratenko held a conference with the agenda "On the Selection of an Optimal (!) Variant for the Storage and Processing of Low-Activity Liquid Radioactive Waste in 1994 and for the Period Until 1996."

Judging by the minutes of this event, the kray officials in attendance, as well as the representatives of the Pacific Fleet Command, consider the construction of on-shore tanks for draining liquid radioactive waste, including that from the aforementioned tankers, to be the optimal variant.

Everything would appear to be clear; their services were not needed there. However, the obstinate Sergiyenko—was it a matter of principle?—wrote to the governor for the third time. He insisted that all projects be accepted on an equal footing and considered on a competitive basis.

Incidentally, Sergiyenko knows the Zvezda Plant well and has a clear notion of where and how an installation with the miracle sorbents can be placed there.

I was shown the text of a telephone message which was received in Vladivostok from high Moscow spheres. In response to a request of the Japanese to be given an opportunity to see the TNT-5 and the TNT-27 firsthand, the message stated that this was only permissible if the tankers were brought out beyond the confines of the "classified" bay. Apparently, the fact that the tankers cannot be moved was left out of the picture.

It would be naive to think that the funds promised by the Government of Japan can be spent on something new, something that has not been tested in the worldwide

practice of nuclear waste disposal. As Valeriy Danilyan, chief of the chemical service of the Pacific Fleet, remarked reasonably, "the Japanese will only give money for something they are in a position to control." However, could this be precisely the case in which we should try to do without the now very customary "humanitarian aid" and solve our problems ourselves, all the more so if this independent path is economically advantageous?

Environment Minister Speaks on Radioactive Dumping at Sea

OW0704144994 Moscow Radio Moscow in Japanese
1107 GMT 5 Apr 94

[Text] Viktor Ivanovich Danilov-Danilyan, Russian minister of protection of the environment and natural resources, held talks with Japanese Ambassador to Russia Koji Watanabe on 4 April. In the talks, the minister stated that a decision on dumping of liquid radioactive wastes into the sea should be made only by the Russian Government, and that the Maritime Kray administration has no authority to independently decide on the issue. Minister Danilov-Danilyan made the remarks in response to Ambassador Watanabe's concern over Japanese media reports that the Maritime Kray administration seems to be preparing to authorize additional dumping of liquid radioactive wastes into the Sea of Japan.

In proposing that Japan provide financial and technological assistance to Russia at an opportune time, Minister Danilov-Danilyan stated that it would be possible for Russia to completely prevent the dumping of liquid radioactive wastes into the sea if it can construct temporary tanks for storing the radioactive wastes in the maritime region with Japanese cooperation. In the meeting with Ambassador Watanabe on 4 April, Minister Danilov-Danilyan highly appraised Japan's cooperative position in the field of dealing with nuclear wastes. Moreover, the minister assured that Russia would conduct a thorough environmental survey at storage tanks for liquid radioactive wastes as well as facilities for solidifying these wastes.

Ministry Against Burying Hungarian Nuclear Waste in Russia

LD0604194794 Moscow ITAR-TASS in English
1928 GMT 6 Apr 94

[By ITAR-TASS string correspondent Aleksandr Shuvakov]

[Text] Moscow April 6 TASS—The Russian Ministry of Environmental Protection and Natural resources declared against signing the Russo-hungarian protocol "on burying glazed radioactive waste products on the territory of the Russian Federation," the Ministry's press centre said on Wednesday.

The protocol supplements a Hungaro-Soviet agreement signed in 1966.

The protocol contradicts Russia's "law on environmental protection," a relevant presidential decree and the ensuing

order of receiving radioactive waste" passed by the Russian Ministry of Nuclear Power Industry.

The Ministry of Environmental Protection has expressed bewilderment in respect of a governmental instruction, which mentioned that it had supported the protocol.

According to the Russian legislation, the reprocessed waste products should be returned to the exporting country, the ecologists had warned. But their opinion was not taken into account by the authors of the protocol.

The planned burial of 66 tonnes of radioactive waste products from the "Paksh" Hungarian nuclear power plant will aggravate the hard situation in such burial places in Russia.

The move infringes upon Article 50 of the "Law on Environmental Protection," which prohibits "imports of radioactive waste products or materials from abroad with a view to storing or burying."

Environment Ministry Says No to Nuclear Waste From Hungary

MK0604072094 Moscow SEGODNYA in Russian
6 Apr 94 p 1

[Unattributed report: "Ministry of Environmental Protection and Natural Resources Against Hungarian Waste"]

[Text] The Russian Federation Ministry of Environmental Protection and Natural Resources categorically objects against burying glass-enclosed radioactive waste from Hungary on the territory of Russia. The opinion of the ministry as well as the stance of the Russian Federal Committee for Oversight of Nuclear and Radiation Safety and the Russian Federation Foreign Ministry had not been taken into account, despite official reports, at the time a draft protocol on this matter was agreed.

The Ministry of Environmental Protection and Natural Resources will be insisting on an immediate correction of the document because the protocol directly violates the law "On the Protection of the Natural Environment."

Oversight Body Decides Not To Dump Nuclear Waste Into Sea

MK0204105094 Moscow SEGODNYA in Russian
2 Apr 94 p 7

[Dmitriy Alekhin report in the "Waste" column: "Will the TNT-5's Radioactive Cargo Get Into the Sea of Japan?"]

[Text] The sensitive issues of radiation security are fairly effective in helping politicians build their image. Naturally, when local authorities decide to rid their residents of an enhanced radiation danger source, the latter react to this as manifestation of special care being shown to them. There is nothing bad about this, yet it is not always that the best possible methods are found to resolve such problems.

As RIA Novosti reported, the radiation aboard the TNT-5 tanker, filled with radioactive waste from Pacific Fleet

nuclear submarines, has deteriorated. The vessel, moored at the Zvezda plant in Bolshoy Kamen Bay, has developed a leak in its drainage, pipe, and valve system, as a result of which the radiation level in the aft engine room since the previous check (on 28 December 1993) has doubled, reaching 1,400 microroentgen/hr.

This conclusion, according to the news agency, was made yesterday by a team of specialists created on orders of the Maritime Kray administration. Experts believe that in April-May the situation could aggravate rapidly; in the end this could lead in particular to the shutdown of the Zvezda plant, which is engaged in dismantling nuclear submarines under the START II Treaty. RIA Novosti also reported, citing Yevgeniy Stomastyuk, chairman of the Maritime Kray Environmental Protection Committee, that in order to avoid a major ecological catastrophe the commission deems it expedient to dump the liquid nuclear waste aboard the TNT-5 tanker into the Sea of Japan this May.

SEGODNYA's correspondent managed to obtain a comment from employees at the State Committee for the Supervision of Nuclear and Radiation Safety [Gosatomnadzor], an organization in charge of radiation safety on a Russia-wide scale. Gosatomnadzor representatives believe that because matters of ecological and radiation security come under the jurisdiction of federal authorities, such a decision by a local commission can be only of a recom-mendatory character. SEGODNYA's correspondent also learned that Gosatomnadzor has decided not to allow the dumping of radiative substances into the sea but to pump the liquid waste from the tanker to other vessels which are in good condition; the TNT-5 itself, after corresponding treatment, will be towed to a safe place.

Minister on Processing Hungarian Nuclear Waste

LD0204222894 Moscow Radiostantsiya Eko Moskvy in Russian 1800 GMT 2 Apr 94

[Excerpt] The Russian-Hungarian treaty on burying processed nuclear fuel on the territory of our country is quite advantageous for Russia, Viktor Mikhaylov, minister of nuclear power engineering, told INTERFAX. Let me remind you that during his visit to Hungary Prime Minister Viktor Chernomyrdin signed an agreement under which processed nuclear fuel from Hungarian nuclear power stations is to be brought to Russia, for which our country is to be paid \$40 million. Here is a report from our correspondent.

Correspondent Yevgeniya Novikova: Russia is still receiving radioactive waste from foreign nuclear power stations under international agreements once concluded by the Soviet Union. This concerns only those stations that were built by the Soviet Union on its neighbors' territory, and with which appropriate agreements were concluded. According to Greenpeace, processed nuclear fuel is currently stored on the territory of combines in Chelyabinsk and Krasnoyarsk, where the ecological situation has already caused a high incidence of radiation sickness and oncological diseases among the population. [passage omitted]

Tripartite Team To Test Nuclear Waste Sites in Sea of Japan

OW0404153594 Vladivostok Radiostantsiya Tikhii Okean Maritime Network in Russian 0815 GMT 26 Mar 94

[By Oleg Padenko; from the "Pacific Ocean" program]

[Text] Vladivostok today has other problems. After our bothersome winter, the city needs cleaning and piles of rubbish removed before they become the cause of dreadful epidemics. This work has already begun and, as a matter of fact, quite intensively; however, the Sanepidstantsiya [Sanitation and Epidemiology Station] has not ceased to sound the alarm.

The problem of environmental pollution does not only concern the Vladivostok authorities. The Governments of Russia, South Korea, and Japan are quite concerned with the level of pollution in the Sea of Japan. The Russian scientific research vessel Okean, in the Japanese port of Niigata this week took aboard Korean and Japanese scientists, as well as an International Atomic Energy Agency [IAEA] expert, and sailed for the first radioactive waste dump site. Journalist Oleg Padenko will now give you a more detailed report.

[Begin recording] Padenko: This expedition was approved by the governments of the three countries whose shores are washed by the Sea of Japan. It is also being financed by these three countries and that is why it is equipped with modern equipment that will be taken aboard the scientific ship Okean in the Japanese port of Niigata, and where the Russian scientists will be joined by researchers from Japan and South Korea. Besides them, representatives of the Pacific Fleet—the culprits of the piece—as well as an observer from the IAEA will also take part in the research voyage. The reason for the expedition is known: the dumping of low radioactivity liquid wastes into the Sea of Japan by the Pacific Fleet in October last year, although our maritime neighbors have also solved such problems near their shores in the same way.

As was clarified later, our Navy dumped the polluted water legally, that is, with the permission of the Russian Ecology Ministry and in compliance with IAEA requirements. The radioactive waste dumping operation was observed by the environmental organization's vessel, Greenpeace. However, as they say, every cloud has a silver lining, since it served to make everyone once more raise the quite urgent and more-than-just-topical issue of environmental protection. And here, it is important to unite the efforts of all the sides concerned. The first step has been taken. To work out recommendations, the joint expedition aboard the Okean will collect samples of the sea bottom, take water samples at various depths, and carry out a quick analysis using a full range of tests to detect pollution in the sea. Well, what do the scientists expect from this joint work? Yury Niko-layevich Volkov, expedition leader and director of the Far East Hydrometeorological Institute, explains.

Volkov: I am hoping for positive results from this expedition. That is, that the radioactivity level will be no higher than normal background levels; however, the experiment will give us the final proof.

Padenko: It is apparent that you have already mixed somewhat with your foreign colleagues, namely the South Korean and Japanese specialists; tell us what do they have to say on this matter? What is their opinion about this voyage and the problem in general?

Volkov: They recognize that the problem is an important one and that this expedition must basically reassure the public that the sea is ecologically clean so that ordinary folk, who watched television and saw the dumping of the liquid radioactive waste, would not be afraid to buy fish—because it is on household tables daily. Nevertheless, knowing how the dumping was done and what level of radioactivity there was, I and, of course, the other scientists also think that there are no consequences.

Padenko: Nevertheless, the expedition is still going?

Volkov: Of course, all this is being done at the highest level and in compliance with international standards, so that all the people understand that generally there is no danger to people's health. Although, I reiterate that it is better not to dump in the first place, so that we will not have to investigate later. *[end recording]*

Environment Minister, Japan's Envoy Discuss Waste Issues

LD0504004094 Moscow ITAR-TASS World Service in Russian 1835 GMT 4 Apr 94

[By ITAR-TASS correspondent Vladimir Solntsev]

[Excerpts] Moscow, 4 Apr—A decision on the dumping of radioactive waste into the sea can only be made by the Russian Government, and the Maritime Kray administration has no authority to decide this question independently. Viktor Danilov-Danilyan, Russian minister for the protection of the environment and natural resources, said this during the course of a meeting today with Japanese Ambassador to Moscow Koji Watanabe. The minister gave this explanation in reply to the ambassador's expressed concern over Japanese press reports that the Maritime Kray authorities were allegedly planning to sanction the further release of radioactive waste into the Sea of Japan.

Danilov-Danilyan made the supposition that a decision on the dumping "may easily be avoided, especially if Japan provides financial and technical assistance at the right time, and we are able to set up temporary coastal capacity to store the waste." [passage omitted]

During the course of today's meeting, Danilov-Danilyan highly appraised Japan's desire for cooperation in this sphere. He also gave an assurance that his ministry would carry out a thorough ecological study, both of temporary capacities for storing liquid radioactive waste and of capacities for turning it into solid waste.

Kostikov Says Russia Committed To Utilize Nuclear Waste

LD0804115094 Moscow ITAR-TASS in English 1000 GMT 8 Apr 94

[By ITAR-TASS correspondent Tamara Zamyatina]

[Text] Moscow April 8 TASS—The agreement to bury nuclear waste on the territory of Russia, signed by Premier Chernomyrdin in Hungary, is in line with the commitments which Russia, as the Soviet Union's successor, has to fulfill. Vyacheslav Kostikov, presidential press secretary, told a Kremlin briefing today at the request of the Russian president and prime minister.

He said that the agreement, signed in Hungary, envisaged the processing and utilisation of nuclear wastes from atomic power plants built to Soviet blueprints in the Hungarian Republic. "Russia will avoid concluding such agreements as soon as the terms of the existing international contracts expire," Kostikov noted.

Security Council Opposes Premier on Hungarian Nuclear Waste

MK0804094094 Moscow KOMMERSANT-DAILY in Russian 8 Apr 94 p 3

[Ilya Bulavinov report: "Security Council Opposes Prime Minister's Decision. Viktor Chernomyrdin Cherishes Radioactive Memories of the USSR"]

[Text] Yesterday, the Security Council's Interdepartmental Commission on the Environment presented a memo to the council's secretary, Oleg Lobov, on the need to revise agreements reaffirmed during Viktor Chernomyrdin during his recent visit to Hungary. The issue is the possibility of burying radioactive wastes of the Hungarian "Paks" nuclear power station in Russia. KOMMERSANT-DAILY has learned that the prime minister discussed the impending scandal with Boris Yeltsin, too, during their meeting in Zavidovo on the evening of 6 April.

On 30 March, Viktor Chernomyrdin issued a directive tasking the Atomic Energy Ministry, upon agreement with the Foreign Ministry and the State Nuclear Supervision Committee, with signing a document with the Hungarians whereby Russia would "accept for reprocessing spent nuclear fuel of the 'Paks' nuclear electric power station, with vitrified (that is, encapsulated in glass cubes) radioactive wastes of the reprocessing to be buried on Russian territory." It has turned out, however, that this is only the tip of an iceberg detected by environmentalists. In fact, the agreement to accept Hungarian radioactive wastes has been prompted not only by the desire to earn money.

Under the prime minister's directive, the Atomic Energy Ministry was to sign a protocol as part of a bilateral treaty between the Soviet Union and Hungary, which was concluded back in 1966. At the time, when building nuclear power stations abroad, Moscow usually undertook to reprocess and to store radioactive wastes on its territory. Having declared itself the legal successor to the USSR, Russia has effectively taken over the obligation.

The problem is that on 21 April 1993 Boris Yeltsin signed an edict obliging the government to make provisions for the return of nuclear wastes reprocessed (vitrified) by Russia to their respective owners when negotiating inter-government agreements on the construction and operation of nuclear power stations abroad. Moreover, the Law on the Protection of the Environment prohibits "radioactive wastes from other states" from being brought into Russia "for the purposes of storing or burying." Under the documents, Russia has effectively no objections against the reprocessing of the wastes, but it refuses to keep them on its territory for further storage. The prime minister could hardly be unaware of the documents. During the visit, however, he preferred to bear in mind only the old treaty that suits Hungary alone. This may cost him plenty. According to KOMMERSANT-DAILY information, today the State Duma is also planning to discuss the matter of burying Hungarian wastes.

The Security Council's Interdepartmental Commission has demanded that agreements between Russia and Hungary be brought in line with the presidential edict and Russian law. The environmentalists' resolve has been boosted by the fact that representatives of the Foreign Ministry, the State Nuclear Supervision Committee, and the Environmental Protection Ministry have voiced disagreement with the draft protocol in response to the commission's unofficial requests. They have made no official denials, however, that they themselves have been involved in drafting the document. Meanwhile, radioactive waste storages in Chelyabinsk Oblast at the "Mayak" Production Association, which vitrifies nuclear wastes, have long been overfilled. The regional authorities' official stance on the "parcel" from Hungary is yet unknown—they also prefer to keep silent.

Kostikov Gives Reasons for Kuntsevich's Dismissal

*LD0804100194 Moscow ITAR-TASS World Service
in Russian 0905 GMT 8 Apr 94*

[ITAR-TASS correspondent Tamara Zamyatina]

[Text] Moscow, 8 Apr—"The committee for conventions on chemical and biological weapons under the Russian president agreed to the transportation and storage of poisonous substances in densely populated areas. That is why its chief Anatoliy Kuntsevich was dismissed by presidential decree." This was the explanation of the wording of Kuntsevich's dismissal "for a single gross violation of duties" given by the head of state's press secretary Vyacheslav Kostikov at a briefing in the Kremlin today.

Moreover, Vyacheslav Kostikov noted that Anatoliy Kuntsevich had spent many years working on the creation of chemical weapons and "it is difficult for a person to part from his child even if the child is dangerous." For this reason, the president's press secretary said, the person dealing with the destruction of the chemical arsenal should not be one who was involved in its creation.

Allocation of 900 Billion Rubles to Contaminated Zones

*LD0704220694 Moscow Radio Rossii Network
in Russian 1600 GMT 7 Apr 94*

[Text] It is expected that 900 billion rubles will be allocated this year to 21 Russian regions, victims of radioactive contamination and other disasters. This is 7 percent of the total amount of investments in the federal budget. Andrey Shapovalyants, first deputy economics minister of the Russian Federation, said this today during the parliamentary hearings at the State Duma on the issue of correlation between the federal and regional budgets.

Maritime's Nuclear Subs To Discharge Waste in Sea of Japan

*LD0804144994 Moscow Ostankino Television First
Channel Network in Russian 1100 GMT 8 Apr 94*

[Text] Oleg Padenko: The fact that yet another nuclear submarine is being dismantled at the Zvezda Works was immediately known in the Maritime Kray. After all, the question immediately arose as to what to do with the water from the submarine, polluted with radiation, since the notorious TNT-5 tanker, like others, is full to overflowing with life-threatening waste. This is in the center of the Bolshoy Kamen town, quite near to Vladivostok. [video shows port facilities, vessels, residential buildings nearby]

Nor is there any protection against the impending disaster. Local projects to treat the waste are unrealistic and the Japanese assistance is hanging in the air.

It is precisely for this reason that the interdepartmental commission working at the Zvezda Works made a sensational decision on the necessity to discharge the liquid radioactive waste into the Sea of Japan, as was done before, because nothing else can be done.

Ahead is the dismantling of a further number of nuclear submarines, more than 40.

ARMENIA

Ecologists, Academicians Oppose Armenian Nuclear Plant

*NC0504204594 Baku Azerbaycan Radio Televiziysi
Television Network in Azeri 1600 GMT 5 Apr 94*

[Text] The State Committee on Ecology and Environmental Protection and the Academy of Sciences held a joint press conference today. Our colleague Menzere Sadiqova reports:

[Begin recording] Sadiqova: At the very time when the ecological (?balance) has already been gravely disrupted, no state can remain indifferent to an attempt by a neighboring country to use nuclear power. Therefore, the agreement signed between Armenia and Russia on the reopening of the Metsamor nuclear power plant has raised serious concerns. The reopening of the nuclear plant, which poses a danger not only to the Caucasus but also to all Caspian Sea countries and which was built to operate for a limited duration, will cause radioactive waste to

trave[through Azerbaijan and then to the Caspian Sea via rivers. The reopening of this plant, which was planned to withstand a seven-point earthquake on the Richter Scale but is located in a seismic region susceptible to 9-point earthquakes, might amplify the tectonic processes in the Caspian Sea and cause yet another Chernobyl tragedy at the very time when the level of the Caspian Sea is rising.

Arif Mansurov, chairman of the Azerbaijan State Committee on Ecology and Environmental Protection, provided detailed information on these issues during the news conference. He assessed this decision by Armenia and Russia as a lever for political pressure.

In his statement, Academician Eldar Balayev, president of the republic's Academy of Sciences, said that the Metsamor nuclear plant generates more than 14,000 waste [measurement not specified] each year and added that there are many Armenian nuclear experts working in various nuclear centers; the reopening of this plant might enable them to gather in Metsamor in the future and allow them to make use of atomic power for nonpeaceful purposes.

The news conference was held in Russian and English because foreign reporters were also taking part.

We are currently in a state of war with Armenia. Do you think that by reopening the nuclear plant they could make use of it for military purposes?

Mansurov: At present, Armenian politicians are in a bind and could resort to anything. They could also make use of the waste from the nuclear power plant. [end recording]

AZERBAIJAN

Official Views Caspian 'Ecological Crisis'

94WN0239A Baku AZERBAYDZHAN in Russian
5 Apr 94 p 2

[KHABAR-EGRKIS report under the heading: "From the Stream of News"]

[Text] The Caspian Sea is on the verge of ecological crisis. According to Fikret Dzhafarov, chief of the planning department for use of natural resources of the Azerbaijan Republic State Committee on Ecology, one of the causes of the crisis is many years of barbaric use of natural resources. About 12 billion cubic meters of polluted sewage is dumped into the Caspian Sea annually. More than 18,000 square kilometers of aquatic area are covered by petroleum film, which is ruinous for the flora and fauna of these areas. A sharp, steady rise in the Caspian Sea level is also a cause for alarm. Between 1901 and 1976 it fell steadily. USSR scientists considered this process irreversible and launched "projects of the century": damming the Kara-Bogaz-Gol Bay, rerouting Siberian rivers, etc., which cost tens of billions of rubles. However, in 1976 the sea level began to rise steadily. Between the 1989 and 1991 it rose another 1.8 meters.

According to scientists' forecasts, by the year 2000 the Caspian Sea level will rise another 2 meters. Major industrial and residential complexes and more than 50,000

hectares of cultivated agricultural land will end up in the flood zone on the territory of Azerbaijan. The changed level will shift by many kilometers the borders of territorial waters, which may lead to interstate conflicts. The issue of defining the status of the water reservoir has been raised in this connection. By proposing to assign to the Caspian Sea the status of near-border reservoir, specialists of the Azerbaijani State Committee on Ecology were working on the basis of its genesis and location, which indicate that it is a lake, whose level is not permanent and which is subject to strong anthropogenic influences. The question was raised for the first time by the Azerbaijani delegation at the Tehran meeting, where the proposal for an organization of Caspian states was discussed. At the next meeting in Astrakhan Russia proposed to impose a 12-mile territorial zone, which was not in the interests of Azerbaijan. The issue remained unresolved.

"Over 70 years of Soviet power, in violation of all ecological norms, Azerbaijan was deprived of enormous reserves of oil in its soil, and the only chance the republic has now to deal with ecological and economic problems is by developing the rich oil deposits in the sea. Today Khazar is without a master; the interests of several states have clashed over its waters, and some people want to take the Caspian riches without bearing the responsibility," Fikret Dzhafarov said in conclusion.

UKRAINE

Kostenko: 'President Is Under Nuclear Lobby's Thumb'

WS0804110894 Kiev VECHIRNIY KYYIV
in Ukrainian 2 Apr 94 p 1

[Interview with Minister of Environmental Protection Yuriy Kostenko by Oleksandra Oksanchuk; place and date not given: "Nuclear Lobby Begins 'Rebuilding Communism';"—first paragraph is VECHIRNIY KYYIV introduction]

[Text] The edict by the Ukrainian president from 23 February "On Urgent Measures To Develop Nuclear Power Industry, To Set Up Nuclear Fuel Cycle in Ukraine," which VECHIRNIY KYYIV has already reported on, generated many responses and questions by our readers. How unsafe will the development of nuclear power plants be? The Chernobyl tragedy is still our current problem, it has not fallen into oblivion. We asked Minister of Environmental Protection Yuriy Kostenko to comment on this issue.

Kostenko: First, I state that this presidential edict was adopted without any cooperation with the ministries and departments—the Ministries of Health and Environmental Protection, the State Committee for Problems of Consequences of the Chernobyl Catastrophe, and the State Committee for Control Over Nuclear Power Industry—which are responsible for the state of the nuclear, radiological, and ecological safety. This edict is a vivid example of how the executive power—our president—violates the Ukrainian legislation and is under the nuclear lobby's

thumb. The edict itself is absolutely inexpedient from both economical and ecological viewpoints.

I will begin with the economy. A lot is being written and said about the nuclear power industry being much cheaper than the electric one. As practice shows, electrical energy produced by the U. S. nuclear power plants is 1.5 times more expensive than the energy produced by thermal power stations. Why? For the first thing, high demands concerning nuclear safety considerably increase the costs and main expenses. For the second thing, companies which own nuclear power plants participate in special funds for establishing nuclear waste sites. For the third thing, each nuclear plant should be closed down and neutralized after having worked to the end of its operating life. To implement these conditions, a special fund should be established which will have to include tariffs for electric energy costs. Finally, any state which has nuclear power plants should establish a national nuclear waste site which is an extremely expensive undertaking. In the United States, costs for carrying out scientific research for drafting criteria for establishing such waste sites stood at over \$1.5 billion, while building costs of the nuclear waste site were estimated at more than \$6 billion.

One more important point. According to the concept of the development of the nuclear power industry in Ukraine, we are planning to begin using "KANDU" nuclear reactors produced in Canada. They are safer than Russian ones. In addition, they can use the natural uranium and we can stop buying the concentrated uranium in Russia. Why should we build imperfect reactors? Is this advantageous for someone?

Oksanchuk: However, deliveries of Russian nuclear fuel to Ukraine is one of the conditions for our disarmament, one of the provisions of a tripartite Moscow agreement. Currently, only we are keeping to this agreement....

Kostenko: This is the thing. Though, we have delivered 120 warheads to Russia, we are still waiting for Russian deliveries of the concentrated uranium. When the Supreme Soviet discussed disarmament issues, the matter of establishing a joint enterprise for dismantling armaments and the further use of the concentrated uranium for the nuclear power industry was raised. This would have been more advantageous for Ukraine than obtaining nuclear fuel from Russia. For example, the costs of an enterprise—which "General Electric" promised to build with us—to dismantle ammunition and transform the highly concentrated uranium to the low concentrated variety would have stood at \$25-35 billion. The United States' financial support for our disarmament could have been used for this purpose. Therefore, it would have cost nothing for Ukraine to set up such a joint enterprise. If the Ukrainian nuclear power industry begins operating "KANDU" reactors, we will have enough nuclear fuel—extracted from warheads—for over 150-200 years. Currently, we give back everything and receive only partial compensation which will cover our demands for only three-five years.

In my opinion, no economic crisis can justify the operation of the second Chernobyl reactor. God forbid the next

accident! Otherwise, this portion of the Ukrainian soil will forever become a radiological cemetery.

In Zaporozhie, where the sixth nuclear reactor will be put into operation soon, the nuclear power plant is located close to the thermal electric plant. Discharges from the thermal electric plant mix with an enormous quantity of steam discharged from the nuclear power plant and cause oxide rains. This region which is very important in the production of agricultural products is experiencing a serious ecological crisis because oxide rains devastate everything. It is necessary to estimate what is cheaper: operating a nuclear plant or producing high quality agricultural products.

The Rovno nuclear power plant was probably built on karstenite cavities. Expenses to underpin the foundation of this nuclear plant have already exceeded the planned expenses of this site by 40 percent.

The aforementioned presidential edict also includes a clause which foresees putting into operation a new block at the South Ukrainian nuclear power plant. To put it into operation, a big reservoir should be built because the low water in the Yuzhnyy Bug River does not allow the effective cooling of the reactor. This reservoir will cover large territories. This situation has already been discussed twice by sessions of ecological experts: The first one was held in the time of the former USSR; the second one—recently, by our ministry. Both inspections stated the inexpediency of setting up one more reservoir because picturesque landscapes will be covered with water and the ecological balance will be disturbed. In general, all this can lead to the death of the river. The situation will likely resemble that of the Dnieper cascade, where reservoirs turned into stinking bogs.

Therefore, I state that the implementation of this edict will have one result: Ukraine will be economically ruined and the ecological situation in the Republic will be greatly aggravated; if we continue operating our nuclear power plants, the consequences can become really unpredictable.

Oksanchuk: You opposed and are opposing our president. However, I will vote for you and my next question is as follows: If my Supreme Council candidate cannot do anything now when he is a minister, what will he do in the Supreme Council?

Kostenko: I am sincere: I owe everything that I have done within the ministry only to my deputy status. I have always opposed antiecological decisions. (A minister who opposes the government is not welcome there.) Do you remember the situation when Lanovyy began opposing the president, and was immediately dismissed? I used my deputy status to oppose the passing of the antiecological law by the government. However, there are limits to everything. Currently, it is difficult to speak about any results when the state management of the environmental protection branch has not undergone any reforms. Reforms will be possible when the Supreme Council adopts corresponding decisions. Therefore, I am running in the elections because the office of the minister does not enable me to proceed with ecological reforms. I am pinning my hopes on the new Supreme Council which—if our people make the appropriate choice—will first and foremost think about the future strong and independent Ukraine with clean fresh winds and water, green forests, and a healthy population.

REGIONAL AFFAIRS

EU Directives Put Water Authorities Under Pressure

PM3103090694 London *THE EUROPEAN* in English
1-7 Apr 94 p 20

[Theodor Troev report: "Water Chiefs Fight a Tidal Wave of Red Tape"]

[Text] Today, there are some 30 European Union [EU] directives or decisions concerned with controlling water. Their implementation over the past two decades has involved substantial sums of money.

But key EU officials on one side, and top executives representing the industry on the other, often have conflicting views on the problems faced by the sector.

Recently, some industrialists appealed to companies to do all they could to ensure that those who make the decisions in Europe are fully aware of the cost consequences of new directives and take into consideration the consumers' willingness to pay.

Tom Garvey, deputy director-general on environment at the European Commission, admits that the Commission is "sometimes criticised for making proposals for new legislation without giving proper consideration to the financial implications."

He argues, though, that the cost of providing water to very demanding standards has to be set against the advantage of the health protection it affords. "There are two possible points of departure for such a debate. Firstly, can we afford to pay for the standards which are set? And secondly, can we afford not to have such standards?" Garvey says.

However, water and waste management companies such as Britain's Severn Trent draw attention to the huge amount of money that Europe would need to spend in order to get anywhere near the standards, for example, of the UK or Switzerland. "The enormity of the number of directives—like the issues it raises—renders the whole debate meaningless on a Europe-wide basis," says Roderick Paul, Severn Trent's chief executive.

The water industry in England and Wales has needed to spend 28 billion pounds (\$42bn) to improve its services. Severn Trent itself has spent more than 2bn pounds over the past four years to achieve high standards. Apart from providing water services in the UK, the company's waste water services business handles domestic, commercial and industrial waste in Belgium. "When one considers EU directives in their broadest sense, I always find it strangely perverse that Severn Trent is helping Flanders to run its waste water services operation, and that Brussels itself has no sewage treatment capability," says Paul.

Future economic growth is seen by some to be adversely affected by the high costs for clean water. "The alternative—poorly managed polluted water supplies—may be an even worse threat," argues Garvey. He urges water sector officials in Europe to use the best available scientific

knowledge, as in this way "we are more likely to be able to keep the price of our water under control in the future."

However, it may take some time before such a message is acted upon by all EU members. Valerie Homer, deputy director of the Water Companies Association in London, says the UK is the only EU country which issues comprehensive annual reports on the quality of water. Denmark and Portugal also prepare reports, but neither covers the entire country. In 1996, every EU country will be obliged for the first time to produce a report on compliance with the water directives. This will be the first occasion when it might be possible to draw a clearer picture of the situation in Europe.

Most water industries have either gone through change or are about to be reformed. In countries such as France and the UK they have been privatised, but water in most EU states is still controlled by municipal authorities. In Spain, public and private companies co-exist. Public subsidies towards capital development costs are available in some countries and not in others. Tariff structures also vary; water is only metered in certain countries.

Paul believes that the way to meet cost challenges of EU regulations is to say that everything must be relative, because the basis upon which the regulations are set vary from country to country. He says: "Apart from the EU, the last word lies with the industry. We cannot go on expecting the customer to pay for whatever the regulator's latest ideas may cost."

EU Raises Import Quotas for CFC's

94WN0221A Duesseldorf *VDI NACHRICHTEN*
in German No. 10, 11 Mar 94 p 9

[Article by Martin Boeckh: "Chemical Industry Fears Black Market"; Subhead: "EU Commission Raised 1994 Import Quotas for CFC's"]

[Text] Frankfurt, 11 March 1994—It was only recently learned that the EU Commission has massively increased the 1994 import quotas for chlorofluorocarbons[CFC's] and halons. The chemical industry in the FRG is now up in arms against this decision. It fears that its efforts so far to develop substitutes will be frustrated.

Back in the seventies, atmospheric scientists warned of a thinning out of the ozone layer in the stratosphere as a result of CFC's that had proven themselves so overwhelmingly in daily use as propellants in sprays, cooling or cleaning agents or as foaming agents. The scientists' warning did not go unheeded. Industry went all out in the search for new, environmentally friendly substances. Manfred Ritz, spokesman for the Chemical Industry Association [VDI] in Frankfurt acknowledges the success of development activities in the branch: "By now there is an adequate substitute for virtually all applications."

For instance, "R134a" (hydrofluorocarbon [HFC]), a chlorine-free fluorocarbon is now available as a substitute for cooling systems that will not harm the ozone. Naturally, such a substitute is not to be had free of charge. In the words of Dr. Rudolf Staab, head of the "specialty products" business unit at Hoechst AG, Frankfurt: "Such

substances currently cost three to four times more than CFC's because of higher raw material costs and more expensive production." This may also be the reason for the present emergence of a "gray market" for CFC's and halons through the back door, as it were, and yet completely legal. In the future they will be allowed to be imported in large quantities from non-EU countries. For in the EU's latest decision, the import quota for CFC's from third countries into the EU was dramatically increased.

VCI spokesman Manfred Ritz characterized it as a "low-blow to environmental policy." And Dr. Hartmut Vennen, a spokesman for Hoechst, remarked that the decision was "political shenanigans at the expense of the environment." Still, what lurks beneath the patently questionable decision from Brussels?

As so often, it is the different political position inside and outside the EU that operates at the expense of environmental protection. The European signatories to the Montreal Agreement at their November 1992 meeting in Copenhagen resolved that production and consumption of fully halogenated CFC's in Europe in 1994 were not to exceed an amount of 46,000 "Ozone Depletion Potential [ODP] tons." Using the descriptor "ODP" as a clearing-quantity, allowance is made for the different ozone depletion potentials of the individual compounds.

As of 1 January 1995, production and marketing of CFC's in the EU is prohibited, albeit not their use. Only in the FRG will it be forbidden to operate new systems with CFC's as of 1995. This is because of the 6 May 1991 "ordinance prohibiting CFC's and halons." In plain terms, however, that means that in the future, old systems in Germany as well as old and new systems in other European countries may be unrestrictedly cooled with CFC's.

But, if dealing in freshly manufactured CFC's is outlawed, where are the CFC's to be gotten from? The alternative here is to import "used goods" from all corners of the world, for, even countries that have signed the Montreal Agreement may go on merrily producing them. The People's Republic of China (PRC), for example, currently has an annual per capita consumption of nearly 0.05 kg. Like all developing countries, however, it is allowed to produce 0.3 kg annually per capita. Rudolf Staab's prediction is: "In the future, China all by itself will make up for it if the western world backs out of the production of CFC's."

Even worse is the fact that China, India and the CIS countries as producers are busily seeking out customers in the industrial nations that are now heading towards zero in their production of CFC's and want to market their new substitutes. An indication that this suspicion is not groundless is the enormous amounts of CFC's ordered by EU importers this year in Brussels. Dr. Heinrich Kraus, assistant minister in the federal environmental ministry and responsible for the safety of chemicals and their impact on the environment acknowledges: "The amounts requested were so exorbitantly high that some applicants did not even get any amount." Hence, the EU approved

"only" an additional amount of 26,000 t of CFC's, 20,000 t of halons and 85,000 t of carbon tetrachlorides, each in ODP units.

Naturally, this decision runs counter to neither the Montreal nor the Copenhagen protocol. The reason is that specific terms are linked to the new import licenses. Only used or recycled goods may be imported. "Where are the 26,000 t of recycled goods supposed to come from," asks Staab. And chemists corroborate the suspicion: recycled and new CFC's are chemically identical and therefore analytically indistinguishable. For this reason Staab's fear is: "In those third countries there is no recycling anywhere, only the labeling."

In the federal environmental ministry there is a calm reaction to this charge: "The Commission has also recognized this handicap and devised a self-declaration form that has been forwarded to all potential importers," explains assistant minister Kraus. On it, each importer is obliged to state specifically where the material originates and also guarantee that it is recycled or used material.

Kraus states: "If 'black market goods' are involved, fines of up to DM100,000 are payable." To be sure, he does not dispute the fact that it will be difficult for an official in Brussels to inspect a producer's recycling capacities in China, India or beyond the Urals.

FINLAND

Radiation Center, Greenpeace Split on Russia Nuclear Waste

LD3103214594 Helsinki Suomen Yleisradio Network in Finnish 1430 GMT 31 Mar 94

[Passages within quotation marks recorded]

[Excerpts] The destiny of nuclear waste from the Loviisa power plant in Russia is dividing Finnish opinion. The environmental organization Greenpeace, which visited the area, claims that the nuclear waste from Loviisa ends up in nuclear bombs. The Radiation Protection Center, which visited the area a little later, denies this categorically. Jaana Kanninen reports.

Kanninen: The representatives of the Radiation Protection Center visited the Chelyabinsk nuclear plant in February and the representatives of international Greenpeace in January. They both had the same aim: to find out what happens to the nuclear waste from Loviisa and whether the Mayak reprocessing plant is safe. The people from the Radiation Protection Center were able to visit the actual closed town that consists of Chelyabinsk Number 65 with its 85,000 inhabitants and the military and non-military part of the Mayak nuclear plant. The Finns were not allowed in the military plant. Greenpeace, for its part, was not even allowed to visit the closed town but had to content itself with information from a capital city about 80 kilometers away. In reading the reports of those two groups it seems as if they are talking about different planets. One of the central claims of Greenpeace is that the nuclear

waste from Loviisa at least partly ends up as material for nuclear bombs. [passage omitted]

Nuclear safety manager Jukka Laaksonen from the Radiation Protection Center denies this categorically.

Laaksonen: "The nuclear waste from Loviisa is not used for military purposes, this is absolutely clear."

Kanninen: Two military reactors are still operating in Mayak and they manufacture mainly tritium, an explosive used in nuclear warheads. Laaksonen says, however, that nuclear waste has nothing to do with the manufacturing of tritium. Ida Siimes of Greenpeace, for her part, thinks that it is quite possible that plutonium is also manufactured in Mayak and the spent nuclear fuel is suitable for that. The only thing the two parties agree on is the health of the local inhabitants.

Laaksonen: "It is clear that the old waste has caused an increased risk of cancer and some of the people in the area who have cancer have no doubt contracted it because of the waste."

Kanninen: Jukka Laaksonen from the Radiation Protection Center says that the incidence of cancer is caused by old sins: accidents and emissions, of which there were many in the history of Chelyabinsk. According to him, the waste reprocessing plant is now well-managed and no emissions into the environment take place. Greenpeace disagrees.

Siimes: "The local laboratories in Chelyabinsk have measured an increase in the quantity of plutonium isotopes outside the closed area, and this is believed to be caused by Mayak's emissions into the atmosphere. The amount of plutonium has increased even in the 1990s and it is therefore reasonable to assume that the plant is still making dangerous emissions into the atmosphere." [passage omitted]

Steps Needed To Comply With Rio Pact Outlined

Conversion to Bioenergy

94WN0175A Helsinki HELSINGIN SANOMAT
in Finnish 5 Feb 94 p 9

[Article by Johanna Mannila: "Carbon Dioxide Committee Calls for Effective Energy Conservation: Enduring Forest Policy, Modernized Autos, More Research, and Restoration of Marshes to Natural State, on Wish List"]

[Text] Active and enthusiastic energy conservation programs will increase in Finland if the Second Carbon Dioxide Committee's recommendations are implemented. The committee considered ways of decreasing Finland's carbon dioxide emissions to conform to the Rio pact.

In addition to effective energy conservation and an enduring forest policy, the committee wants to modernize autos, increase research on energy, and restore drained marshes to their natural state. The generation of carbon dioxide emissions will also be prevented by cutting down on waste.

The committee also proposes an increase in the protection of large timber stands and old forests and that trees be allowed to grow older than they are at present. Forests serve to absorb carbon dioxide, that is, trees bind the carbon dioxide in the atmosphere to themselves.

In the committee's opinion, making more efficient use of our forests would only slightly lessen the role of absorption. The committee estimates that the amount of growing timber in areas used by the forest industry will increase from 1.8 billion cubic meters to about 2.05 billion by the year 2000 if logging operations remain at their present level.

The amount of carbon contained in the entire timber stand would increase from about 600 million tons to about 730 million. The average amount of carbon dioxide absorbed during this period would be over 40 million tons a year, whereas the figure was about 27 million tons in the late 1980's. Absorption problems will only arise if logging operations rise to over 70 million cubic meters a year.

Rio Agreement Goes Into Effect Next Month

According to the agreement on climate concluded in Rio in 1992, emissions of greenhouse gases must be stabilized by the turn of the century and restored to their 1990 level.

The agreement is to go into effect in a month since 50 countries have ratified it. Ratification is pending in Finland, but parliament will decide on the matter this spring.

The committee submitted its proposal to Environment Minister Sirpa Pietikainen (Conservative) on Friday [4 February]. "It is not impossible to achieve this goal, although the target set for the industrial nations is a very exacting one. We need long-term decisions on energy taxes based on carbon dioxide," Pietikainen said. According to her, we must advance at the pace of the other industrial nations in adopting taxes so that Finland's ability to compete will not suffer.

According to Pietikainen, just as with investments in [cleaning up] the environment made in Estonia and Russia, projects involving reforestation in developing countries will probably be chalked up to Finland's credit when each country's carbon dioxide balance sheet is determined. The countries that have ratified the agreement on climate will decide on the matter in future follow-up negotiations. Pietikainen estimated that the reduction of carbon dioxide in neighboring areas by perhaps 2 million tons would count in Finland's favor.

The committee does not reject the alternative of additional nuclear power, even though parliament did decide to rule out construction of a fifth nuclear power plant. The chairman of the committee, Jorma Routti, stated that there would be a need for resorting to the nuclear alternative in Finland in the long run.

Carbon dioxide is the most important greenhouse gas; the others are CFC compounds, methane, and nitrous oxide.

Finland produced 58 million tons of carbon dioxide emissions in 1990. All greenhouse gases totaled about 80 million tons. Nearly 30 million tons of carbon dioxide are bound in forests every year.

No Simple Solution

The increase in concentrations of greenhouse gases in the atmosphere may alter the earth's climate and natural environment. There are no simple ways of solving the greenhouse problem: Simple solutions are not enough. The committee summarized its proposal in 17 points:

- Implement a government energy conservation program.
- Adopt taxes on carbon dioxide in such a way that our ability to compete internationally is not weakened.
- Subsidies for investments that conserve energy.
- Research and development on more efficient production of energy.
- Modernize cars, more public transportation.
- Research on community structure.
- More natural gas.
- An increase in the use of bioenergy, that is, wood.
- Maintain a willingness to use more nuclear power if this meets with public approval.
- Restoration of drained marshes to their natural state.
- Reduce community waste.
- Reduce the need for fertilizers, whereupon nitrous oxide emissions will decrease.
- Increase the use of incineration technology and exhaust gas conversion devices.
- See to it that forest carbon reserves increase and that the carbon stored in forests and marshes is not released into the atmosphere.
- Support research on the total amounts of greenhouse gases and the amounts absorbed.
- Active cooperation with Estonia and Russia to conserve energy and reduce greenhouse gas emissions.
- Promote reforestation, restoration, and energy projects in connection with aid for development.

Carbon Dioxide Emissions Due to Energy Production and Use in Finland in 1990

Source	Amount (millions of tons)
Industry	23
Households	12
Services	5
Traffic	12
Other	2.5

Source: Carbon Dioxide Committee's second report, 1994.

Daily Views Recommendations

94WN0175B Helsinki HELSINGIN SANOMAT
in Finnish 7 Feb 94 p 2

[Editorial: "Climate Agreement Requires Emission Control"]

[Text] In accordance with the agreement approved in Rio in 1992, Finland has to use already long-known ways of reducing its carbon dioxide emissions, which are altering the climate. Appointed by the Environment Ministry, the Second Carbon Dioxide Committee regards energy conservation, reduction in the use of fossil fuels, and taking good care of our forests as the most important ways of slowing down the greenhouse effect.

In the committee's opinion, parliament may very well ratify the agreement, which it is at present discussing, which over 50 countries have already approved, and which is to go into effect internationally next month. Parliament must act quickly so that Finland does not lag behind in what may be the most extensive and most important implementation of the Rio agreement. The committee calls for versatile solutions that will be effective for a long time so that carbon dioxide emissions can be stabilized by the turn of the century and gotten back down to the 1990 figures.

A more effective technology than before must be developed for the production and use of energy. We must switch to fuels that produce few emissions and gradually to clean alternatives despite the fact that nuclear power has been ruled out—to the regret of the committee. We are already on the right track in Finland, but development must be accelerated with economic and administrative control measures.

Used with care, the proposed limits on concentrations and taxes on energy will be good alternatives, as long as they do not interfere with trade or weaken our ability to compete. One would not think that this danger is hard to ward off since the other industrial countries will also have to meet the same challenges and the climate agreement will have to be observed in international trade.

The forests offer Finland both leeway and an incentive to reduce carbon dioxide emissions and stimulate other countries to do the same. Woodlands will increase and bind much more carbon than is logged in them. A significant absorption of carbon will also be obtained by planting trees on hundreds of thousands of hectares of arable land to be taken out of agricultural use, whereupon the energy production, industry, and traffic sectors will manage to better implement their own reductions.

While it is impossible to stop the greenhouse effect, the climate must not be allowed to warm up any more than one degree in a century so that conifers, which grow for a long time, can adapt to the new living conditions. Consequently, a country that lives off of the lumber industry has a quite special need for effectively enough slowing down the change.

From Finland's standpoint, interesting as well is the possibility of perhaps counting in its favor reductions in greenhouse gases that we would achieve by modernizing outdated technology for dealing with an abundance of emissions in cooperation with Estonia and Russia or by reforesting desertified developing countries.

The Rio agreement calls for major changes in the climate policies of first the industrial countries and then the developing countries as well. The immediate goal for the turn of the century is only the first stage, after which the process will have to be continued for several more decades.

FRANCE

Ecologist Leader on Nuclear Safety in France, CIS

BR0504151594 Paris LE QUOTIDIEN DE PARIS
in French 5 Apr 94 p 5

[Interview with Brice Lalonde, president of the Ecology Generation party and former environment minister, by Arnaud Hubert; date and place not given: "France Does Not Have Nuclear Policy"—first paragraph is LE QUOTIDIEN DE PARIS introduction]

[Text] Brice Lalonde, former environment minister, has just returned from a fact-finding visit to Russia and Ukraine and is drawing up a report on the nuclear power stations in those countries which he will submit to the European and French bodies in the coming weeks. The president of Ecology Generation thinks that the problems of the French civilian nuclear industry are only just beginning, but that the real urgency lies in Eastern Europe.

Hubert: How do you interpret the Cadarache accident?

Lalonde: I think we are busy experiencing what happened in the United States. Our sites are beginning to age, and age badly. This is a problem for which we are not prepared. I think that with regard to Rapsodie, the risks were underestimated.

Hubert: Can or should this accident call into question the restarting of the Superphenix?

Lalonde: I do not think that the two events should be linked. The only common point is that the Cadarache accident is due to sodium, which is found in very large quantities in Superphenix. But Superphenix is an installation which bears no resemblance to the Cadarache installation. Rapsodie was out of use and I have the impression that this tank was cleaned in a rather slipshod way. Whereas all the fairies are watching over Superphenix and protecting it. Superphenix had to be shut down less because of a possible danger—which exists—than because its design was fundamentally a mistake and it became a financial drain. It will one day be necessary to admit that this story of converting it into an incinerator is a total lie.

Hubert: What is therefore now the order of priorities in France?

Lalonde: The first problem is Phenix, which strikes me as more of a weak link than Superphenix. We have just had a problem with the first of the line, the "grandfather," namely Rapsodie, in the dismantling of this reactor which no longer serves any purpose and the dangers of which were underestimated. We still have the Phenix, the "father," which ought to be shut down. Superphenix shuts down every five minutes because of alarms. The risk would

lie in switching off the alarms so that they could no longer be heard. But if I was in government, I would ask for a report on Phenix.

Hubert: Could safety be more effectively guaranteed in the French civilian nuclear industry?

Lalonde: Of course. At present, we have a risk factor of one in 100 per year and per installation of an accident producing radioactive emissions. We ought to increase that to one in 1,000. Our engineers ought to be asked to improve this probability. They can do so, but they are not doing so because nobody has asked them to. In this country, there is a routine, there are habits, factions which continue their business, and politicians who do not know what orders to give. In short, there is no nuclear policy.

Hubert: You have just returned from a fact-finding visit to Eastern Europe. Does what you saw there present a nuclear threat to Europe?

Lalonde: Yes, there is a real abyss in Ukraine and Russia. That is where things will collapse first. The situation is deteriorating, especially because of Russian nationalism and the prevailing chaos. In Chernobyl, the population was moved. Almost 5,000 people were mobilized to clean up, they were ordered to do so because of the nature of the Communist regime still in place at the time. It would now be absolutely impossible to do that. The mechanisms of alternative democratic, administrative, and economic authorities have not been established. Russian nationalism proclaims that its power stations are the best in the world and that the Western countries have no role to play in them. Ukraine, for its part, depends almost 100 percent on Russians for its engineers and its spare parts. Anything which affects safety in Russia and in Ukraine comes second to production.

Hubert: So there is a risk of a second Chernobyl or worse?

Lalonde: Yes, and I am not sure that it is just a risk, I think it is a certainty, and at any time. Moreover, this is a very strange failure by our Western democracies. It is rather like Bosnia: We know, we watch, but we do nothing, or not much.

Hubert: Does nuclear power still represent the future in the energy sphere?

Lalonde: It is not certain. It is one technology. The future rests more with renewable energy sources. The nuclear industry presupposes a great deal of virtue. At present it is like being on a road on which our engineers responsible for nuclear safety are driving while telling us: "You see, I don't have accidents! I'm driving at 110 km per hour and controlling my car." They forget one thing: There are other drivers who drive very badly.

Hubert: You are very pessimistic...

Lalonde: I am a realist. I realize to what extent this world is becoming a little more radioactive every day.

GERMANY

Toepfer Calls for Halt on Chlorofluorocarbon Imports

AU3103073394 Duesseldorf *HANDELSBLATT*
in German 30 Apr 94 p 4

[“er.” report: “Toepfer Calls For Import Stop”]

[Text] Duesseldorf—In a sharp manner, Environment Minister Toepfer has called for an import halt on chlorofluorocarbons from third countries to the European Union [EU]. The Christian Democratic Union politician called on Brussels to no longer grant import permits for the “ozone killers” as of 1995, even if this is legal. According to Toepfer, imports of up to 26,000 tonnes of chlorofluorocarbons to the European Union are again permitted this year, but only if the material is reprocessed or used. However, with this import permit, the European Union is exposing itself to the suspicion that “in practice” it is not taking its commitment to the protection of the ozone layer “seriously,” Toepfer complained. While Germany will abandon chlorofluorocarbons in 1994, Brussels is opening “the door to imports.” The Commission should discontinue the allotment of quotas, as soon as the production of chlorofluorocarbons is terminated all over the European Union at the end of 1994, he said. Moreover, guarantees from industry that all substances used in the meantime “do not endanger the ozone layer” are necessary. Behind the scolding are investigations regarding illegal chlorofluorocarbon imports from Eastern Europe to France via Germany.

Eco-Audits Expanding, Being Pushed by Market
94WN0221E Duesseldorf *VDI NACHRICHTEN*
in German No. 9, 4 Mar 94 p 11

[Article by Peter Schwarz: “Eco-Audit: If They Are Unwilling the Market Will Pressure Them”; Subhead: “Pressure on Companies to Certify Their Environmental Management Growing as Result of EC Ordinance”]

[Text] Duesseldorf, 4 March—As of April 1995, companies will be able to have their environmental management assessed voluntarily. That is what the EU Eco-audit ordinance stipulates. But it is obvious even now that many firms are being compelled to implement the eco-check. Banks, insurers and customers are applying pressure.

In mid-November, last year, the presidents of the Federal Association of German Industry [BDI] and the German Industrial and Trade Association [DIHT] addressed a letter to the federal environmental minister. In their letter to “Dear Mr. Toepfer,” Tyll Necker and Hans Peter Stihl condemn the turnabout in government environmental policy. According to the three-page document, the private sector expects the government to seize the opportunity afforded by the eco-audit ordinance to “refashion the relation between self-responsibility and oversight.”

The leaders of Germany’s private sector would like the federation and the laender to confine themselves to their

core responsibilities. The eco-commitment at summit sessions should henceforth promote environmental protection and no longer new laws and regulations. The corporate eco-check that the EC ordinance outlines in 21 articles and five appendices was vigorously opposed for years by German industry.

Since then, private sector groups, gnashing their teeth, have struck up a friendship with the new instrument of Brussels’ environmental policy. They have reconciled themselves to the ordinance on two grounds. Otherwise than originally stipulated, no firm is strictly obliged to take part in the audit. Besides that, the text of the ordinance is amply unspecified. It is up to the national governments to regulate what, how and by whom the detailed audit should be conducted.

So that in the future the government will not get involved in regulating corporate environmental management any more than at present, in Germany the BDI and DIHT are pushing for a solution “that is private sector-friendly and based on the principle of self-administration.” In their conception, the Accreditation Sponsorship Society [TGA], that is entrusted, among other things, with the licensing of quality certifiers, should examine and oversee the suitability of environmental auditors. Since formal appointment of the auditors is a sovereign act, they are proposing a joint Chamber of Industry and Commerce center for it. Ultimately, according to the associations’ plans, the central Chamber of Industry and Commerce [IHK] would also be responsible for registering the firms participating in the eco-audit and reporting to Brussels.

Such extensively conjured self-administration goes too far for environmental minister Toepfer. He would like for the auditors to be appointed by the federal environmental department and registration of the examined business sites turned over to the laender.

What seems to be a petty bureaucratic squabble at first glance is in fact of some significance. For the examining and monitoring organizations that the ordinance requires will ultimately decide how high to set the criteria for the eco-audit. Environmental protection groups like BUND [expansion not given] suspect that the ordinance will be watered down if the private sector implements its proposals.

Dr. Adolf von Roepenack who is involved with the EC ordinance at the BDI, does not share such fears. The requirements for the auditors have to be “pitched very high.” In fact, the private sector would hurt itself if lax examinations led the eco-audit “to degenerate into an elegant method for worming out of environmental protection,” as Dr. Gerhard Feldhaus, head of the NAGUS [expansion not given] environmental committee at the German Industrial Standards [DIN] in Berlin, expresses it. Hence, only if the eco-audit is undertaken earnestly will the federation and the laender be prepared duly to reduce pollution. Anyone participating in the eco-audit could be relieved of the reporting obligation for it. Shorter approval times might also be conceivable.

NAGUS chairman Feldhaus, however, considers bureaucratic muscle-flexing justified only once the audit has proven its worth in practice for several years. First of all, the legislative groundwork for it has to be laid. Experts from the environmental ministry and private sector associations are currently consulting on the moot issues.

But even were a solution to be found in upcoming weeks, no one in the federal environmental ministry expects an "eco-auditor and site registration bill" can be passed in this legislative session. At most, a cabinet decision may be possible. According to the EC ordinance, however, the member countries will have to create a feasible certification system at the latest by April of next year.

The new administration therefore will be under time pressure. If the Social Democratic Party [SDP] has the say-so in Bonn after the election in October, the BDI and DIHT will not be able to implement their self-administration model. Social Democratic environmental spokesman Michael Mueller gives minister Toepfer encouragement on this issue. For this reason too, something augurs that the federal environmental department will chime in with something important to say on the licensing of auditors.

Many corporate consultants are annoyed by the squabble between the minister and the industrial lobby that has been simmering for months. The consultants scent a big deal. Dr. Marlies Sander of Roland Berger & Partner concedes: "Of course we have an abiding interest in moving the issue along."

The Munich consulting firm, one of the majors in the branch, with nearly DM300 million in annual turnover, has not yet decided if it will have itself accredited as an independent eco-auditor or confine itself to the consulting business. At the moment, Marlies Sander estimates that Roland Berger is earning "in the single-digit millions" with eco-consulting. In her opinion, so far only a few firms in Germany are involved in the issue of eco-management.

The Brussels eco-audit could now change this. If not from conviction, then under the more or less gentle pressure of the market, many firms will participate in the examination process. By as early as next year experts are projecting several hundred firms will. Large companies like Daimler-Benz are presently checking out the ecological fitness of a number of sites. If certification is possible by 1995 they will be the first to have their environmental friendliness checked by the EU.

But medium-sized outfits too are well advised soon to cast a glance at EC ordinance 1836/93. Automobile suppliers, above all, will have to expect pressure on them from the manufacturers for the eco-check, according to the conclusion of an in-house study by Roland Berger. After all, vehicle manufacturers in turn will be under pressure. Eco-certificates will be required with increasing frequency from abroad in the government's award guidelines.

Banks and insurance firms too will be taking an interest in the eco-risks of their clients. Dr. Hans-Juergen Advena, managing director of Cologne's Gerling Consulting can

therefore well imagine that a successful eco-audit will be taken into consideration in setting premiums and awarding loans. In Advena's words: "Ultimately, the confirmed eco-report from a neutral auditor facilitates an objective risk impression."

For this reason too, Gerling Consulting is unwilling to exclude the fact that after a successful trial period the eco-audit will become obligatory for all businesses. On the basis of article 20 of the ordinance, in any case, the entire system will be on the test bench by 1998 at the latest. Even Dr. Klaus Heuvels of Frankfurt's Metallgesellschaft [MG], who took part last year with a lead works in a Brussels pilot audit, expects "effectively, what is an option will become an obligation."

On the basis of his experience at MG subsidiary BSB Recycling in Braubach the EC concept has "fully passed the first practical test." What does the audit contribute to the firm? Heuvels mentions four items above all: all essential eco-data are documented, weaknesses are identified, employees are sensitized to ecological problems. Also, according to the eco-jurist, the expert examination can reduce civil and criminal legal liability risks.

For Volker Brennecke who is preparing the "eco-management" project at the Association of German Engineers [VDI] in Duesseldorf, the eco-audit affords the firm an additional opportunity: "The operational eco-checks should be seized by the firms as an opportunity, based on the comprehensive analysis of processes and procedures, both to avoid future pollution and also to initiate technical and organizational innovations. In this context synergistic effects are possible that will pay off in business terms."

Environmentally Related Illnesses Emerge as Major Issue

94WN0221D Duesseldorf VDI NACHRICHTEN in German No. 9, 4 Mar 94 p 3

[Article by Birgitt Riese: "How Much Illness Is Environmentally Induced?"; Subheads: "Airborne Pollutants Blamed for Respiratory Tract Infections and Allergies"; "No Longer Industry But Automobile Traffic Now the Leading Producer of Pollution. Scientists at First International Congress for Environmental Medicine Came to This Conclusion Last Week in Duisberg. Frequently, however, There Are No Methods for Identifying Any Specific Substance As Causing Illness. Intensified International Cooperation Should Help Resolve Such Toxicology Issues."]

[Text] Duesseldorf, 4 March 1994—"A second stage of environmental precaution must now follow upon the environmental repair phase." These are the words that North Rhine-Westphalian environmental minister Klaus Matthiesen used to open the First International Congress for Environmental Medicine. "The sky over our country is once again definitely cleaner." This means that since the mid-eighties sulfur dioxide emissions decreased by nearly 775,000 tons per year, nitrogen oxide emissions by about 361,000 tons per year and the load of dust reduced to approximately 10 percent.

Such statistics confirm that the load of mass pollutants has been considerably lessened. But it creates the misleading impression that the environment is now back in shape. Actually, however, the amount of pollution being discharged has only shifted from industry to automobile traffic. Prof. Ulrich Ranft from the Medicinal Institute for Environmental Hygiene in Duesseldorf describes the result of a study conducted in Essen in 1991: "Compared with industrial waste gasses, concentrations of nitrogen oxides and benzenes from traffic have risen considerably."

Research has also demonstrated that automobile exhaust causes illness. Residents along heavily traveled roads suffer much more from respiratory tract infections and fall victims to allergies more often than those living in less polluted areas. German researchers are not alone in acknowledging this, as Prof. Hans-Werner Schlipkoeter, president of the congress, is aware. "In Israel, Japan and the U.S., it has been possible to establish a correlation between the increase in automobile traffic and the rise in the number of allergy-related illnesses."

Sulfur dioxide, nitrogen oxide and benzene, however, are not the only causes for a spate of illnesses. A host of other substances like dioxins, heavy metals, solvents and asbestos are polluting the environment and are ingested via the food chain or the air that is breathed in. Science's goal is to analyze such pollutants and devise testing methods to be able possibly to verify their impact in provoking illnesses.

But researchers are often still groping in the dark. In Duisberg, Canice Nolan of the EU Commission tossed out for consideration: "We are still nowhere near concluding the impact of a substance from its concentration in the environment, although considerable advances were made over the past decade." Appropriate methods are still missing, above all, for chemicals that do damage to genes. That is why in 1988 the EU initiated a research program involving biomonitoring, medical oversight of a specific group of the population exposed to genetically toxic chemicals. Under it, for example, the researchers are looking for "biomarkers," that is, physical substances that characteristically undergo change both in their numbers and their structure when someone comes into contact with a specific substance.

Different methods lead to different conclusions. That is why there is no internationally uniform assessment of the risks from cancerous (carcinogenic) substances. Whereas in the U.S. and Russia only individual substances are classified as more or less carcinogenic, in Germany all substances suspected of being cancerous are analyzed and assessed.

Besides the difficulty in any event of assigning cancers to specific causes, an additional problem confronts German researchers: a lack of data. Since they consider it a threat to protected data, the laender have still not been able to agree on the introduction of a national cancer registry. In Schlipkoeter's words: "The absence of a cancer registry is an enormous impediment to research." Alternatively, were data regarding lifestyles, jobs and previous residences

available, it would facilitate the correlation of causes and illness. Ulrich Halekoh of the Medicinal Institute for Environmental Hygiene in Duesseldorf asks the question: "Lung cancer can result from smoking, substances in the workplace and airborne pollution, but which factor is the cause?" Not only that, but researchers are still far from being able to assess the combined effect of several pollutants.

Depending on where they live, are Germans subject in different ways to heavy pollution? On the basis of pollution involving polychlorinated biphenyls [PCB's], a study by the university of Erlangen-Nuremberg concluded that the concentration of PCB's in the blood serum did, in fact, increase with age but was independent of place of residence. Not all pollutants are distributed so evenly. The regional distribution for airborne substances varies widely.

Numerous environmental physicians are scaling a slippery slope. For instance: diesel soot. Up until now, the exhaust soot has not been classified as a carcinogen, even though the particles do cause lung tumors in rats. Uwe Heinrich of the Fraunhofer Institute for Toxicology and Aerosols in Hannover provides food for thought: "There is no escaping the fact that diesel soot may contribute to the risk of lung cancer." But the automobile industry counters this with toxicological studies absolving diesel soot of a cancer risk. Up until now, however, it has not been possible for scientists to definitively arrive at an internationally uniform assessment.

Actually, if legal limiting values were adhered to, the risk of falling ill from breathing in a substance could be significantly reduced. But it cannot be entirely eliminated. In that case, to be sure, a substance could no longer occur at all in the environment. As Schlipkoeter says: "Zero risk means zero dosage and that means that life could no longer go on as usual."

Raw Materials Extracted From Special Types of Waste

94WN0221C Duesseldorf VDI NACHRICHTEN
in German No. 9, 4 Mar 94 p 26

[Article by Ursula Schiele-Trauth, Christa Friedl: "Raw Materials Lurk in Special Waste Materials"; Subhead: "Recycling Must Not Be More Costly Than Incineration, So Far Only Small Quantities Recycled"]

[Text] Duesseldorf, 4 March 1994—Recycling is becoming worthwhile as incineration costs rise and landfill capacity declines. This holds good increasingly even for special kinds of waste. New processes are supposed to bring the waste streams into production.

No one is able to state precisely how much special waste material is actually piling up in the FRG. Berlin's federal environmental department [UBA] bases itself on projections from the federal statistics department from the year 1990 and estimates nearly 14.5 million tons per year. For certain, the technical guidelines for special waste from the year 1990 saw to it that more waste has been estimated as special waste material since they distinctly expanded the list of the sorts of waste. Additionally, the waste spectrum is undergoing change. For example, the accumulation of

contaminated soil from the cleanup of old dumps is increasing and so is the accumulation of sewage sludge from the purification of effluent.

About one fifth of such dangerous waste materials in Germany is actually slated for incineration. Peter Reher, chairman of the committee for waste treatment of the German Industry Association [VDI] Society for process engineering and chemical engineering [GVC], remarks: "The capacity of existing facilities is totally inadequate. The fact is that seven of the 16 laender have no incinerator capacity for special kinds of waste."

German waste legislation recognizes 332 kinds of special waste materials, but just 11 significant streams constitute nearly 40 percent of the sourcing. Topping the list with much more than one million tons are industrial sludges and sulfite liquors from the paper industry. There are presently no alternatives to incineration worth mentioning for either of those two sorts.

Research activities are underway throughout Europe to reduce the amounts of special waste materials in all fields, since it is not only in Germany that there is a shortage of incinerator and landfill capacity. The Euroenviron working group's report "industrial wastes," that was recently submitted by the UBA, for example, reports on such endeavors. Uppermost is the quest for economically practicable processes since lots of possible recycling processes founder on the high costs for them.

Berzelius Umwelt-Chemie [BUS], Luenen, is operating a demonstration facility for the processing of salt slag resulting from the recycling of aluminum alloys. In it, the scrap aluminum is liquefied under a coating of molten salt. The salt coating protects the metallic aluminum from oxidation and absorbs pollutants and reaction products that form during the melting process. After casting of the liquid aluminum alloy, the molten salt solidifies into slag. Each ton of secondary aluminum that is produced accounts for 0.7 t of salt slag. According to UBA statistics this is approximately 232,000 t per year. Aluminum alloy granulate residues, but, above all, the qualitatively high-grade coating salt are recovered by dissolving and recrystallizing the slag. The waste management contribution for the slag is lower than landfill costs in this context.

For quite some time industry has also been working on the processing of solvents and used oils. Modern combustion engines require oils that contain a large number of synthetic additives in addition to actual raw petroleum products. This sophisticated blend has posed a number of unsolvable problems for traditional recycling processes. Dollbergen refinery has now succeeded in processing even those kinds of used oils and emulsions without the addition of chemicals. "Multi-effect vacuum distillation" operates on a cascade system at graduated temperatures under a slight vacuum. Oils recycled here meet the high requirements, for example, of the automobile and steel industry, according to the operators.

Waste materials expert Herbert Maerz of Stuttgart's Baden-Wuerttemberg special waste material disposal [SBW] GmbH, views the increasing recycling of solvents

and used oils with mixed feelings. "The high thermal value fractions are thereby removed from the waste stream." It is hardly possible with the remaining spectrum of poorly combustible, mostly solid waste materials, to maintain a conventional combustion process without the addition of oil or gas as backup energy. One alternative is the thermo-cycling process developed jointly by SBW and BC Berlin Consult for low thermal value special waste materials. It is currently undergoing testing.

Also among the top contenders in the special waste materials statistics are waste lacquers with nearly 193,000 tons per year. The Bremen branch of Mercedes-Benz, for example, uses hydrogenation of the dried lacquer sludge together with other organic residues as an important step in the reduction of that source. Besides a liquid phase similar to petroleum, the resulting end product is also gaseous hydrocarbons that are reused in petroleum refineries. The solid residue from fillers and pigments can be disposed of in coking processes.

Notwithstanding the high standard for industrial serial lacquering, in every lacquering process high percentages of the color droplets overshoot the workpiece and are collected as overspray in a curtain of water. Depending on the plant's degree of automation, in extreme instances, up to 80 percent of the lacquer that is used ends up in the resulting sludge. Currently, a process by the Duisberg firm Envilack promises to recover the raw materials from those amounts with no loss of quality. Envilack managing director Peter Brodt describes his experience: "The chromophore portions can be very well separated out from the dehydrated lacquer coagulates."

The group from Duisberg uses the force of gravity in its process. Generally speaking, inorganic pigments and fillers are heavier than binders and solvents and therefore can be separated out using disk centrifuges. A second step is membrane filtration to separate out the organic pigments. The result is a clear honey-yellow lacquer that can be used without reservations for the production of new lacquers. The processed pigments are used in anti-corrosives. The portion of the cost for the process that is borne by the producer of the residue is, according to Brodt, DM1,000 per ton less than the cost of incineration.

Rippert Anlagentechnik in Clarholz has developed a fresh concept for lacquering processes using water-base lacquers. No lacquer sludge accumulates here at all initially. In the spray cabin no water trickles down the walls, only the water-base lacquer that is to be sprayed. The overspray now directly hits the circulating lacquer that is trickling down and is immediately reabsorbed by it. The compound is continuously checked by appropriate measuring devices. According to data from the producer, such a "lacquer in lacquer" spray cabin can pay for itself in as little as two years with 100 percent usage of the lacquer and no need for disposal of sludge.

In a report last year the UBA reported: "Despite recycling and efforts at avoidance, the amount of dangerous waste materials in the FRG still continues to increase." In this

connection, there is hardly any segment of waste management where data and statistics are so uncertain as in special waste materials. Reports on the results of the individual laender regarding recycling quotas and the decline of up to 30 percent of special waste materials are often no more than wishful thinking or a question of definition. UBA expert Hans W. Jacobi cites one example: "Special waste materials that are piled up in landfills are considered to be disposed of." Even Envilack managing director Brodt is aware that recycling efforts are only in the first stage: "The amounts that are now being recycled are of no consequence."

First Plant Inaugurated for Recycling Polyurethane

94WN0221B Duesseldorf VDI NACHRICHTEN
in German No. 10, 11 Mar 94 p 22

[Article by Dieter Mueller: "First German Facility for Chemical Recycling of Polyurethane"; Subhead: "Up to 1000 Tons Per Year of Polyurethane Waste Materials from Production of Shoe Soles to Undergo Recycling by Being Broken Down into Source Materials"]

[Text] Pirmasens, 11 March 1994—Up until now industry has been able at most to process polyurethane [PUR] systems into pressed slabs via very unsatisfactory "particle recycling." Such is no longer the case. Regra Recycling GmbH in Pirmasens-Gersbach recently introduced the first facility throughout the FRG for chemical recycling of the production waste materials from PUR shoe soles. In the view of Prof. Dr. Gunter Bauer of Aalen College, it can rightfully claim to be a strictly defined recycling principle.

In the words of Heinz Bader, Regra's managing director, the nearly DM1.7 million investment in the new PUR recycling system should be amortized in fewer than five years. He sees the reasons for this in the rising costs for disposal and the somewhat more favorable prices for the recycled material "Recypol," compared to new material. But what makes the system quickly profitable is primarily the fact that up to 20 percent of the PUR shoe sole output can be reincorporated into the new material. Nor do existing facilities have to be overhauled. Only a metered product feed system has to be integrated for delivery of the recycled material, as Bader explained when introducing the PUR recycling system in Pirmasens in the middle of December.

The batch-processing facility has a capacity of 1000 tons per year. Superficially considered, therefore, it would be over-sized for processing the approximately 70 t per year that result from the chlorofluorocarbon [CFC]-free shoe sole output of Regra Kunststofftechnik GmbH. But the company is offering the excess capacity to other firms that use similar PUR systems for recycling on a paid basis. Additionally, Bader figures that the investment risk is limited. The nearly 70 tons of PUR waste materials from his own group to be processed, have a materials value of nearly DM400,000. As the Regra managing director puts it: "Valuable replacement materials that are too good to dispose of, not to mention the high fees for doing so."

By comparison, the system was built by Kloeckner Ferromatik Desma, Achim, to the specifications of the recycling firm and costs approximately DM500,000, excluding R&D outlays. Prof. Dr. Gunter Bauer of Aalen College holds the patent for the process. He was entrusted with its development under a Regra research commission. The recycling company, however, has secured for itself exclusive market licensing. Elastogram GmbH, Lemfoerde, a member of the BASF group, contributed applied engineering support as a raw materials supplier of PUR systems. Development and creation of the system were sponsored by the Rhineland-Palatinate environmental and economic ministries. Bader applauded the support as nothing to be taken for granted.

According to Prof. Bauer, the goal in developing the process was not to include any new materials (polyol and isocyanate components) in the process. "That means radically modifying the process so that the only materials used for it are those already used in the manufacture of shoe soles." In this context, polyol is combined in a reactor with the waste material and converted into a dispersion at a maximum of 200 degrees C, using a catalyst. The Aalen professor optimistically explained: "That is why this recycling process can rightfully claim to be a strictly defined recycling principle."

One qualification has to be made, however. The process has to be respectively adjusted for the specific PUR recipe. Recycling experts, therefore, cannot convert one recipe one day and another the next day into a singly recycled polyol or even deliver blended PUR waste materials to the process. Still, managing director Bader is optimistic about finding customers for the system and/or recycling orders on a paid basis in the shoe sole recycling sector initially because of the similar recipes. As Prof. Bauer states: "Other PUR processors are confronting the same problems as we are." For example, five million tons of PUR systems are used around the world (1991). Up to eight percent of that results from product waste materials. In this context, advances in PUR recycling technology are making a noticeable contribution to the saving of resources.

Progress has also been reported in the field of processing blended PUR waste materials using glycolysis. Bernard Naber, a degree chemist and recycling expert with BASF Schwarzheide GmbH, reported this in the course of Regra's introduction of a project of the Development Corporation for the Recycling of Plastics [EWvK] in Wiesbaden, in which recycling was tried out on 1.6 tons of PUR low-density foamed material from used car seats. As concluded by PUR experts, each automobile accounts for nearly 10 kg of foamed material of various sorts (block, cold-formed, heat-formed foamed material).

In the words of Naber, the non-uniform chemical composition made it impossible to sort out the waste materials. Still, according to the Schwarzheide PUR recycling expert, despite such unfavorable preconditions, glycolysis is "exceptionally well" suited to be a recycling process. The reason is that in the quest for new fields of application, it turned out that the PUR recycled product can be used especially for the production of solid foamed material as well as coating systems. PUR specialists reintroduced up

to 81 percent of the recycled product into the polyol components for a solid foam and up to 90 percent for a coating system. Naber is convinced: "The recycled products display a properties profile that is comparable to that of conventionally manufactured PUR products." As early as the spring of 1994, therefore, an initial facility operating according to such specifications, is supposed to start processing the product residue of a large FRG automobile supplier.

Environmental Agreement Signed With Poland

LD0704093494 Berlin DDP/ADN in German
0827 GMT 7 Apr 94

[Text] Schwerin (DDP/ADN)—Germany and Poland signed an agreement on cooperation in the area of environmental protection in Schwerin today. Federal Environment Minister Klaus Toepfer and his Polish counterpart Stanislaw Zelichowski signed the agreement after a meeting of the German-Polish environmental council. The agreement includes stipulations on the exchange of environmental data. The parties to the agreement commit themselves to taking all appropriate and effective measures to prevent, reduce, and combat any considerable, cross-border environmental damage.

The environmental council of the two countries determines the guidelines and strategies for cross-border cooperation. An initial environmental agreement was signed with Poland in autumn 1989.

NORWAY

Ecology Promises Lack International Follow-Up

94EN0279A Oslo AFTENPOSTEN in Norwegian
9 Mar 94 p 14

[Commentary by environment reporter Ole Mathisemoen: "Agreements Do Not Solve Environment Crisis"]

[Text] *Self-Delusion: People are signing environmental agreements as never before. But we are fooling ourselves if we think this means action.*

Last week the European countries agreed on a new sulphur pollution protocol. Emissions which come down over Norway in the form of acid rain and kill more and more of Norwegian nature, shall be reduced further over the next 10 years. The agreement will be formally signed in Oslo in June. The great agreement on climate from the environment summit in Rio in 1992 will go into effect in a couple of weeks. Just before Christmas the sister-agreement on biological variety went into effect after having been ratified by 30 national assemblies.

Applause and Honor

Environment bureaucrats are applauding each other. Never before have agreements gone into effect at such a rapid pace. It is hardly two years ago that the accords were signed. And new protocols and regional agreements concerning various small and large environmental problems are being signed all over the world.

However, it would be a fatal mistake in judgement to applaud too loudly. Certainly, paper formalities resulting from environmental efforts are being crowned by victory more often in the 1990's than was common before. But it is a long step from the signing of the agreement to the matter being acted upon. Only a few of the 50 to 60 important environmental agreements in the world have strong built-in mechanisms for follow-up and control. This year's edition of the "Green Globe Yearbook" also shows that the follow-up is poor even for those agreements that have the best built-in mechanisms for follow-up.

The world's environmental agreements can be roughly divided into two categories. In one there are the large accords and framework agreements. These are most suitable for politicians who want to calm an environmentally preoccupied public opinion. The great accords on climate and biological variety from Rio are good examples of this. Without new supplementary protocols for the most part these are without any value for the global environment.

Action

The other type of agreement are those targeting specific actions. Unfortunately, these are a small minority, but all the more important. The best known of these is the Montreal protocol from 1987 with a later addendum whose goal was to phase out emission of gases harmful to the ozone layer. This agreement has been clearly spelled out. It stipulates definite deadlines for all the 131 participating countries. Still, by the deadline of September of last year, only 23 percent of these countries had reported on what they were in fact doing and what results they had achieved. Because it is assumed that most countries would report any action taken on what they had promised to do, the low percentage of reporting countries is taken as a sign that many are not following up. Because this is an agreement with important consequences for industry, the lack of action in individual countries will affect their ability to compete. That is why the great industrialized countries have taken the initiative and proposed introducing strict punishment for the shirkers. Having received a warning those countries might be excluded from the agreement. This means a loss of both prestige and money from the "ozone fund."

The new sulphur agreement belongs to this latter group. True, the text of the agreement offers no opportunity for the imposing of sanctions, but because reduced sulphur emissions in the future will be very costly the 28 participating countries will monitor each other closely. Shirkers means advantages for one's own industry. The sulphur agreement is also very modern. It is a model for future environment agreements in which each country is charged with measures according to how great their emissions are and to the amount of damage they cause. That means saying goodbye to the old-fashioned principle in which all countries must reduce their pollution by the same percentage no matter what the cost and what effect it has. The new sulphur agreement takes as its point of departure the amount of sulphur oxide the various countries are contributing and the amount of damage caused by these emissions according to simulations by computer models.

So far our global society has been able to draft a good agreement either for very definite objectives, such as, for example, how to decrease the emission of gases that break down the ozone layer or for controlling problems that are strictly geographically limited, for instance acid rain in Europe.

However, our answer to the really large and serious problems that place the world in the middle of a serious environmental crisis, is to come up with loose, totally irrelevant nonbinding agreements. To mention just a few; the population explosion, poverty, cutting down the rain forest in the south and the irreplaceable conifer forest in the north, the loss of several hundred plant and animal species every year, the danger of a changed climate as a result of global warming

So far the world has not been mature enough to take the environmental crisis completely seriously. The meeting in Rio in 1992 started a trend. But such trends are without value unless they lead to definite action. And to achieve action, obviously some sort of voluntary force is needed. So far many of the environmental agreements and negotiations around them have been a singular form of ritual dance, mostly suited only to sooth a worried public opinion. The most pessimistic people say that we must wait for a total environmental collapse before the world will react. Another alternative is to put some teeth into the agreements. To do that we need a vigilant public opinion which will not settle for weak agreements with weak follow-up.

Growth Urged To Serve Global Environment

94EN0278A Oslo AFTENPOSTEN in Norwegian
5 Mar 94 p 9

[Guest commentary by Prime Minister Gro Harlem Brundtland: "Growth, Value Increase, and the Challenge of the Environment"]

[Text] *Growth is still necessary to meet new, important social challenges. Growth might even be necessary to meet environmental challenges. It is not true that the slower the rate of economic growth or the lower the increase in consumer demand, the more productive the growth is. It is the kind of growth that is important, Prime Minister Gro Harlem Brundtland writes.*

In the last few years there has been a renewed debate on the relationship between the pattern of production and consumer demand, on the one hand, and the consideration of future generations, on the other, and on how we can achieve a fairer distribution between rich and poor countries. It is an important debate—and it has caught the attention of many. When working with the World Commission report, "Our common future," this was an important question which has now become a focal point in the international debate following, among other things, the Rio conference.

Growing production and demand is not in itself a measure of the increasing wealth of a society. Growth has been necessary to develop our welfare society, and growth is still

necessary to meet new, important social challenges. Growth can even be necessary to meet environmental challenges. It is not true that the slower the rate of economic growth or the lower the increase in consumer demand, the more productive the growth is. It is the kind of growth that is important. Much of the economic growth during the last decades, as it is measured, is related to an increased percentage of people being employed, especially among women. An important precondition for this was the expansion of public services, not least in the areas of health, education and day care.

In the government's long term plan the prognosis for the Norwegian economy for the next 40 years has been presented. The economic growth as outlined in this plan is much lower than what we have become used to during most of the time period since World War II. However, many people still think it is unreasonable that we want to increase our prosperity from the already high level of today. In this case it is important to realize that one-half to two-thirds of the estimated economic growth up through the year 2000 is caused by an increased level of knowledge and improved organization in production. With such a development, in which there is a considerable increase in the level of knowledge and in which we utilize the technological capability that is being developed both nationally and internationally, it will be increasingly possible to combine an increase in the creation of wealth with an improved environment. It has been estimated that many of the environmentally harmful emissions will decrease in the coming 40-year period, in spite of increased growth.

Norwegian industrial concerns are now producing more than ever before, using less energy and raw materials per produced unit, and the production pattern has changed. In a market that just 20 to 30 years ago was dominated by industrial output like iron, metals, fertilizer, and cellulose that was not highly processed, we have today a broader and more modern industry that, among other things, is able to build and equip large and complicated oil installations in the Norwegian territorial section.

Just before the war almost 65 percent of labor was spent on the production of goods and materials. Today almost 70 percent of employees work in the service industry. These changes involve a change also in the use of energy, in the use of natural resources, and in the stress caused by both production and demand on the environment. Growth of services means less stress on the environment than does growth in the demand of goods and materials.

From 1980 to today private demand for services has grown by 40 percent, while demand for manufactured goods has increased by only 7 percent. This shows how the pattern of demand has changed. With the kind of policy we have prepared we will see a continued shift in consumer demand. There will be more growth in the service sector and less in the production of goods. Increasingly more people will work in the fields of health and welfare; in schools, education, and research; and in cultural areas. Even though we, compared to most countries, invest a

considerable amount of resources in these areas, there is no doubt in my mind but that we should increase our efforts even more in coming years.

Such a development will also be seen in the way we measure growth in our economy. Growth by itself is not a goal, but a means to meeting important and urgent challenges in the future. According to the estimate of the Long Term Plan both private and public demand will increase in coming years. Growth of private demand will be caused by more people being employed than today, by employees being more productive and by retirees having larger pensions. We might be able to increase the production of goods without a corresponding increase in the number of jobs or in the number of working hours. However, to improve the range of services offered and to meet the increased need in this area, we must plan on an increased need for more labor. An increasing number of people will be working in the field of health, with the elderly and in education. Some people are still maintaining that we should reduce the number of hours worked and lower the retirement age. Should we do this, it would result in lower economic growth and fewer of the problems we see ahead would be solved.

It is very important that we engage in becoming involved in reducing the disparity between the economic and social development in our part of the world and the poverty and the need in developing countries. But—it is not the case

that reduced growth in Norway simply will result in an increased capacity to alleviate need and poverty in developing countries. On the other hand, it is important that we can turn growth in an environmentally sound direction. Indeed, Norway does not have an especially high private demand compared to other industrialized countries, but we give the most aid per capita to developing countries.

In dealing with the environment there are limits to how far each individual country can go alone without running the risk of jobs being eliminated or moved out of the country. Norway is a pioneering country when it comes to, among other things, using fees and taxes to steer production and demand in a productive direction. To make further progress it is first and foremost necessary to coordinate this effort with other countries. Making it increasingly costly for business to pollute will reduce the stress on the environment, while at the same time encourage developing better and more environmentally friendly work-sharing practices among countries and improve the pattern of production within each individual country. However, we must realize that the one-sided use of measures in Norway only will not have the desired effect, either in the effort to improve the environment or in the effort to even out the differences between rich and poor countries. Are we to succeed, we will need obligatory commitments to working together among the various countries.

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